

FLIGHT

The
AIRCRAFT ENGINEER
AND AIRSHIPS

First AERONAUTICAL
WEEKLY IN THE
WORLD

Founded in 1909 by Stanley Spooner

DEVOTED TO THE INTERESTS,
PRACTICE AND PROGRESS
OF AVIATION

OFFICIAL ORGAN OF THE ROYAL AERO CLUB

No. 1339. Vol. XXVI. 26th Year

AUGUST 23, 1934

Thursdays, Price 6d.
By Post, 7½d.

Editorial, Advertising and Publishing Offices : DORSET HOUSE, STAMFORD STREET, LONDON, S.E.1.

Telegrams: Truditor, Watloo, London.

Telephone: Hop 3333 (50 lines).

HERTFORD ST., COVENTRY.

GUILDHALL BUILDINGS,

260, DEANS GATE, MANCHESTER, 3.

26B, RENFIELD ST.,

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SUBSCRIPTION
RATES:

Home and Canada: Year, £1 13 0; 6 months, 16s. 6d.; 3 months, 8s. 3d.
Other Countries: Year, £1 15 0; 6 months, 17s. 6d.; 3 months, 8s. 9d.

The Air Mail Begins

A GALE of unusual strength for a British August caused something like a fiasco when the new inland mail service was started on Monday last.

We have come to regard fog as the only form of weather which will defeat the modern aeroplane, and it came as something of a shock to learn that the D.H.86, from Glasgow and Belfast, found it prudent to land at Manchester, while the north-bound "Wessex," from Croydon, got no farther than Birmingham. Both lots of mails were then sent on by train to their destinations. It was rather humiliating, but we may take comfort in the thought that occasionally heavy weather holds up steamboat services across the English Channel and the Irish Sea, and that when the new air services are in full running order it is not likely that mere strength of wind will very often prevent them from getting through to their destinations.

We would rather think with satisfaction of the new forward step which was inaugurated on Monday than on the exceptional circumstances which interfered with the first flights. It is undoubtedly a great advance in principle that the Postmaster-General should send letters of 2 oz. and postcards by air without extra charge. That is the point to emphasise. On the services (1) Croydon-Birmingham-Manchester-Isle of Man-Belfast-Glasgow, (2) Liverpool-Birmingham-Cardiff-Plymouth, (3) Birmingham-Bristol-Southampton-Cowes, and (4) Inverness-Orkneys, ordinary letters and postcards are carried without surcharge. The surcharge for letters weighing more than 2 oz. is 1d. per oz. instead of ½d. per oz. by train. Probably in time this distinction will be wiped out, and all letters will be carried by air at the same rates as for rail transport. This occasion is only a beginning and an experiment, and, though we may criticise details, our main feeling is satisfaction that the beginning has been made.

The Postmaster-General has been quite frank about the experimental nature of the service, and he gave

that as his excuse for not including Edinburgh in the initial service. The rivalry of the two largest cities in Scotland is always rather amusing, and the good fathers of Edinburgh seem to have been indignant that Glasgow has been favoured while their city was ignored. The Postmaster was able to reply that other important places had also been omitted, and expressed pious hopes for the future. We may smile, but it is encouraging to see the cities clamouring in rivalry for air mail services.

The point which invites most criticism is the arrangement of the schedule on the main London-Belfast-Glasgow airway. For this, we take it, the Post Office was not responsible. It must have been drawn up by Railway Air Services. This company has certainly plenty of experience available for the drawing up of useful time-tables, and it may have very good reasons for the one which has been adopted in this case. If so, the company has neglected to publish them, and enquiries made have not produced much in the way of satisfactory answers. The schedule seems to have been drawn up on the basis of using only one machine, which starts in the morning from Glasgow, spends two hours at Croydon, and then flies back to Glasgow the same afternoon. As it takes some forty minutes to get from Croydon to Victoria, this wait will not be very useful to a man who thinks of flying from Glasgow to London and back in a day. He will not be able to do much business in London.

It seems to amount to this, that the southward journey is useful and the northward trip is of advantage to very few people. It starts too late in the day (15.10 hours). The Postmaster-General is quite frank about it. In a circular on the subject he says: "The mails for Douglas and Belfast will afford a later time of posting in London for first delivery the next day in the Isle of Man and Northern Ireland generally. Ordinary correspondence for the other towns mentioned will not benefit in time of delivery from transmission by air." We can only hope and presume that before long a north-bound machine will start early in the day from Croydon, and so make that journey as useful as the other.

We take this opportunity of informing our readers that *Flight* is practising what it preaches, and is sending its inland correspondence by air to all the places available on the above-mentioned main airway.

Surveying North Australia

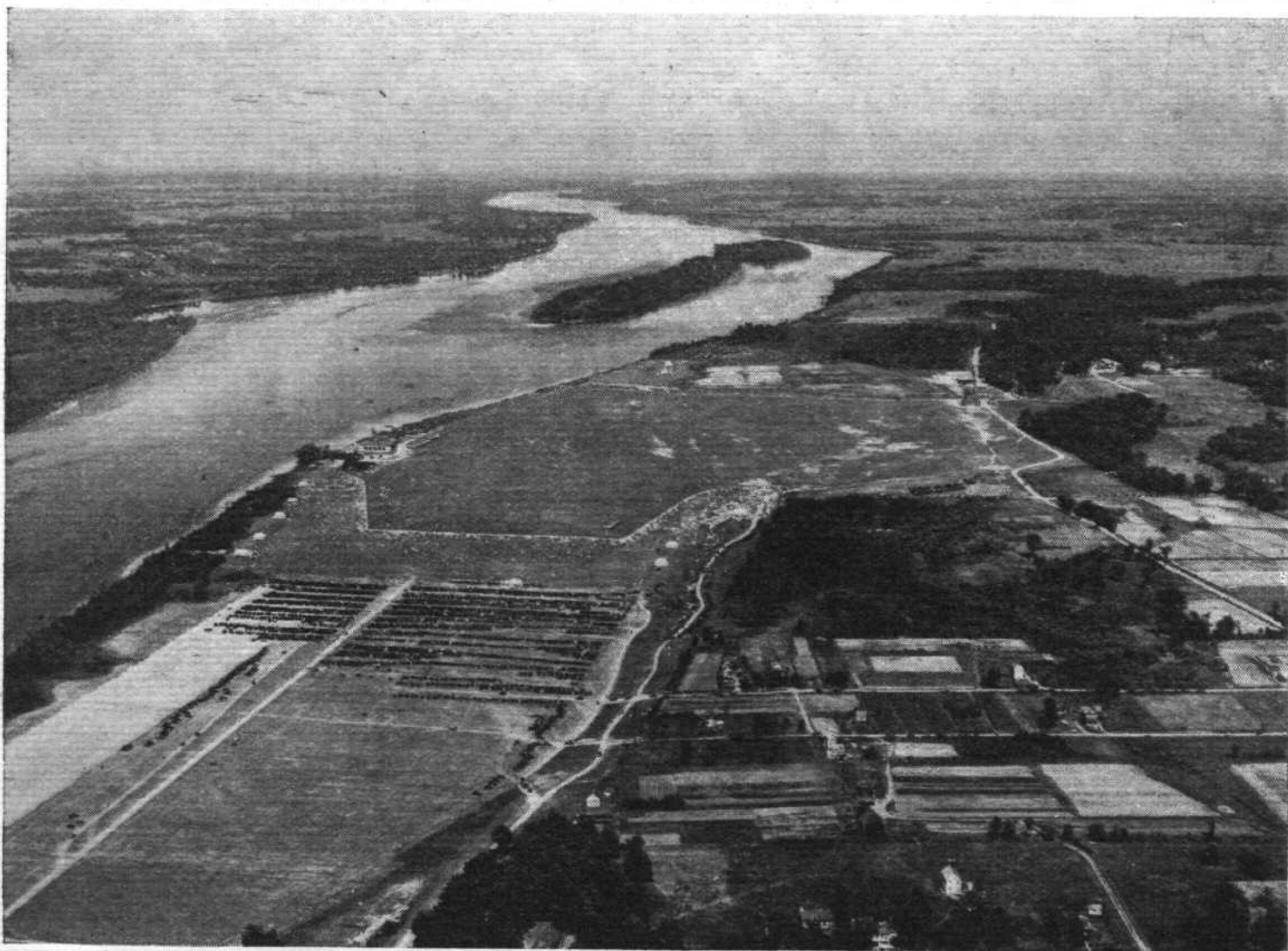
THE Commonwealth Government of Australia has decided to invite tenders for an aerial and geophysical mineral survey of North Australia, that is to say, of the northern tracts of Western Australia, of Queensland, and of the Federal Territory known as North Australia. It is stated that £150,000 has been allotted for the air survey, of which the Commonwealth Government will provide half, while the rest will be provided by the State Governments of Queensland and Western Australia. Details of the invitation have not yet been issued, and it is not yet known what area is to be covered, but a rough calculation on a small-scale map suggests that there are anything from 500,000 to 1,000,000 square miles which would be the better for investigation.

The object of the survey is to get some guide for the areas which would be likely to repay close examination by ground surveyors, in the hope of discovering mineral deposits. Very little is known about this great waterless plain of Northern Australia, where everyone

marvels how the black aborigines contrive to live. There is evidently reason to suppose that minerals are there, and if they can be located then mining industries may be started in the right areas, and then science will make it possible for white men to live there. The difficulty is to know where to start looking for the minerals. To send out surveyors at random into such an enormous desert with elaborate communications by camel train would be an operation which would appal the most enterprising and opulent Government.

The aeroplane can narrow down the field, first noting the areas which seem to deserve closer investigation, and then mapping them in detail. As is well known, air photographs often give clear indications to trained surveyors of the presence of minerals in the soil, and these indications are often invisible to the ground surveyor. Aircraft can also take the ground survey parties to the most promising spots and can bring up their supplies.

To make this great desert productive would be a very great boon not only to Australia but to the world in general, but without the preliminary help of aircraft the task of knowing where to start looking seems hopeless. The Commonwealth Government is to be congratulated on its wisdom in deciding to hold an air survey. If they find any mineral fields for a cost of £150,000, their enterprise will have been very economical of both time and money.



THE CANADIAN AIR FORCE DISPLAY: An aerial view, looking east along the Ottawa River, of the Royal Canadian Air Force Station at Ottawa, taken on July 14, where a fine display was given. The visiting Hawker "Furies" were much admired. A picture showing them at Ottawa will be found on page 872. (Royal Canadian Air Force Photograph.)

The Outlook

A Running Commentary on Air Topics

The Monoplane Vogue

MANY of the earliest aeroplanes were monoplanes, but it was the biplane type which made most headway. The first cross-Channel flight, of which we have just celebrated the twenty-fifth anniversary, was made on a monoplane. The Wright Brothers in America and the Farman Brothers in France were "biplanists." But France had, in addition to M. Blériot, M. Robert Esnault Pelterie, whose R.E.P. monoplanes made early history. In Great Britain the types were, perhaps, fairly evenly divided in the beginning, but the breakage of the wings of certain monoplanes led to a temporary ban on the type, and for a good many years the biplane had it all its own way. It may or may not be due to this early ban that British designers have, until recent years, been almost exclusively in favour of the biplane. This has been particularly so in the case of military aircraft, and at the present time not a single monoplane is in use by squadrons of the Royal Air Force.

An interesting article by an American contributor, the first part of which appears in *Flight* this week, gives brief particulars of the large number of American monoplanes which has been adopted by the U.S. Army Air Corps. It would appear that the change from biplane to monoplane has been forced upon the American constructors by the increasing speed of the heavier machines, which compelled the designers to try every artifice they knew in order to catch up with the fast modern heavy types. The American Army Air Corps has not made the decision lightly. First, single types were thoroughly tested out, and then small batches of monoplanes. The result seems to have been favourable, and the monoplane is ousting the biplane completely in what may be termed "home" squadrons.

It is natural to ask if a similar change is to be expected in this country. The answer cannot be given briefly; there are too many considerations to be taken into account. Several British monoplanes have been built and flown during the last year or so, but none has reached the production stage at which it is adopted for service use. Generally speaking, the monoplane ends up by being a good deal heavier than the corresponding biplane, but it does not follow that this will always be so. The monoplane is more convenient if a retractable undercarriage is to be used, and as this seems to be inevitable this fact will be in favour of the monoplane. Fighting view, manoeuvrability, and overall dimensions are other factors to be considered.

A Sailing Windmill

VISITORS to the Solent district have been treated to an unusual sight lately. A weird sailing craft, having the hull of a "Redwing" (not that for which Mr Kenworthy was responsible, but a Solent One-Design type) and the rotor of an Autogiro, has been seen on occasion in Southern waters. People rubbed their eyes and looked again. Yes, it was real enough. The explanation was that Lt.-Col. Moore-Brabazon, who, as our readers will know, is the holder of pilot's licence No. 1, had the idea that if the rotor of an Autogiro gives great lift when in a horizontal position, it should also give great "lift" when running in a vertical plane. We understand that "Moore-Brab." has communicated some of his aerodynamic results to the Royal Aeronautical Society, and until they are published one cannot know a great deal about the efficiency of the arrangement as compared with orthodox sails. It is not to be expected that the yachting fraternity will take

kindly to this new-fangled whirligig, but there may be "something in it." At any rate, the experiment is an interesting application of the Autogiro principle. It is not difficult to foresee "snags." For example, the whirling blades of the rotor might constitute something of a menace to a crowded anchorage, and already Lt.-Col. Moore-Brabazon has had one argument with a dinghy off Cowes, in which both the dinghy and the rotor blades suffered considerably. Some idea of the kind of forces involved may be formed when it is pointed out that in a 20 m.p.h. wind the rotor is turning at about 200 r.p.m., and the tips of the blades are travelling at anything up to 200 m.p.h. Some years ago a Frenchman designed a drive in which an airscrew working as a windmill was used to drive a water propeller. He expected to drive his craft straight against the wind, but, although he had some measure of success, the invention does not appear to have come into general use. The Flettner rotor was another invention which did not do all that was expected. This, it may be remembered, was a plain cylinder driven by an engine of low power, the deflection of the wind past the rotating cylinder giving the rotor its propulsive force. It remains to be seen if the sailing Autogiro is more successful.

Noise That Annoys

NOISE created by aeroplane engines and airscrews is of two kinds. First there is that which is heard inside the machine itself. This kind annoys the passengers; if to too great an extent they do not travel by that machine and the operator loses his clients. The second kind is that heard outside. This annoys people on the ground so that they grow to dislike aeroplanes in general and do not travel in them, and from this kind of noise, as well as the former, the operator loses, if not actual, at any rate potential, clients.

The first kind is most obviously detrimental to the operator's interests, and for that reason a great deal of time and money has been spent, with a considerable degree of success, on sound-proofing aeroplane cabins, but the latter kind is equally important, and it is high time that something tangible was done about it. Public opinion, backed by Government pressure, quickly produced comparatively quiet motor cars. A similar stimulus would undoubtedly help towards attaining quiet aeroplanes.

The Young Idea

THIS week Lord Sempill puts forward a plea for the young embryo pilot, and asks that he may be allowed to fly solo within certain restricted and observed areas. Actually, we agree that there is no earthly reason to suppose that a boy or girl of sixteen is not, in every way, as capable of flying safely as one of seventeen, and we believe that a young man of quite mature years, with all his newly found confidence, will always be the most reckless, either in the air or on the road. But his sight is perfect, his reactions fast, and he is, consequently, very much safer in his dash than an older man or woman may be in his caution.

Nevertheless, a line must be drawn somewhere, and the age of seventeen may reasonably be taken as this line between childhood and manhood or womanhood. Mature age counts for very little where skill is concerned, but parents must be protected!

AMERICAN MILITARY MONOPLANES

Biplane Disappears from U.S. Army Air Corps

By ALFRED CELLIER

The following article from an American Correspondent gives an outline of the widespread adoption of monoplanes by the U.S. Army Air Corps. This measure, it seems, was dictated mainly by the need for increased speed. In this country the monoplane type has not yet been adopted for issue to squadrons of the Royal Air Force, although several experimental machines have been built recently.

It is interesting to reflect that in the United States Navy Air Service the biplane has been retained. In Great Britain the biplane scores, particularly for work with the Fleet, because of the smaller overall dimensions, which are an advantage when aircraft have to be stored in the restricted space on an aircraft carrier. On the land the same considerations do not apply, and it will be interesting to see if the American "Monoplane Vogue" will spread to this country.

DECIDED radical changes have recently appeared in the design of the aeroplane types which have become standard with the American Army Air Corps. Unlike the Royal Air Force, the United States has separate Army and Navy Air Services. Up to the present time, however, the biplane types of military aircraft predominated. Then a strange thing happened.

Among the many new monoplanes produced, the heavy bombers "put one over." Where, in the past, the pursuit aeroplanes formerly were able to fly rings around the bombers, it was now discovered that they could not get anywhere near the new machines, let alone keep up with them. When the manœuvres were held, this fact became still more evident as the single-seaters tried to dive on the bombardment formations of monoplanes. The bombardment commanders only had to open up their throttles, and they would be miles away when the fighters came out of their zoom. Such tactics against bombers with a speed of 130 miles an hour would not work against those which were doing in the neighbourhood of 220 miles an hour.

The bombardment aeroplanes were not the only type to undergo such radical changes, for pursuit types had to be designed to meet this increased performance and regain their rightful place. These are also of monoplane construc-

tion, as are the observation and attack types that constitute the four branches of the American Air Corps. Two other classifications exist: the training and cargo types, which were not affected by such changes. In the cargo class, however, many monoplanes are to be found. This may be attributed to the fact that it was desired to transport the mechanics for the single-seater squadrons with their units whenever possible. Such organisations are unable to carry additional personnel in their machines, as do the other three branches of the Air Force.

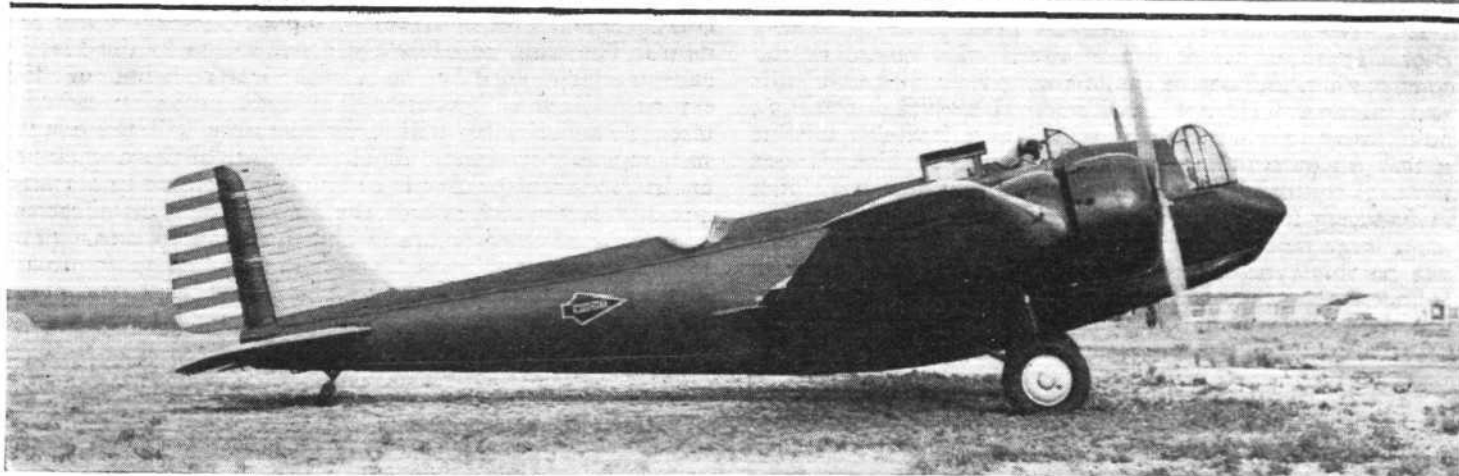
A result of all this has been the gradual disappearance of the biplane types from the Army service squadrons. How long it may be before the biplane will again resume its place remains to be seen. The monoplanes themselves had to undergo exhaustive tests, first with one or two experimental machines, then in small groups for service tests, before the Air Corps was quite certain about making such radical changes. Nevertheless, the monoplanes lived up to, and surpassed, all expectations. This resulted in quantity orders being placed to equip the various units.

It should not be thought that the biplane has altogether disappeared, for to make such a change in a major air force at a time when appropriations are hard to obtain would take a little while. The remaining biplanes are



A BOMBARDMENT TYPE: The Douglas B-7 is powered by two Curtiss "Conqueror" engines of 650 h.p. each.

AMERICAN BOMBARDMENT TYPES

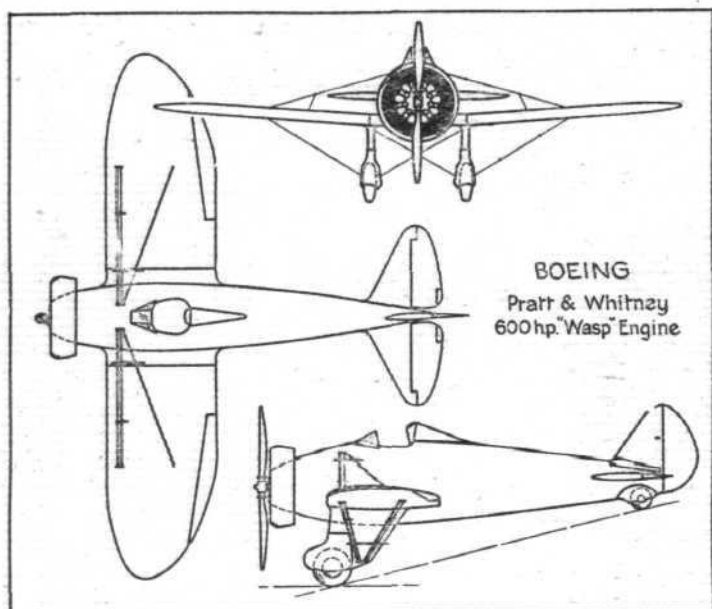


THREE MORE MILITARY MONOPLANES : In the upper photograph is shown the Fokker B-8 with two Curtiss "Conquerors." The centre photograph is of a Boeing B-9, fitted with two Pratt and Whitney "Hornets" of 600 h.p. each. The Martin B-10 is illustrated in the lower photograph. It has two Wright "Cyclones" of 650 h.p. each.

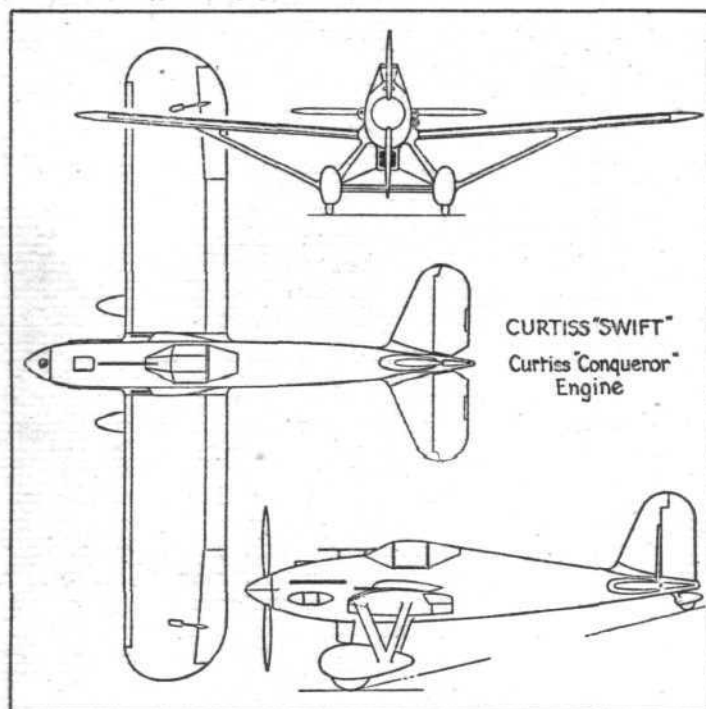
mostly stationed in the possessions, such as the Philippines, Panama and Hawaii, and at the training and other service schools. The tactical units at home, comprising the air force, are the organisations which are being equipped with the monoplanes. These units, made up mainly of pursuit and bombardment with supporting types, would be the ones that would have to bear the brunt of an attack by a hostile air power.

The first monoplane-type bombers on the Army list are the Douglas B-7, fitted with two Curtiss "Conqueror" 650 h.p. engines, and are Prestone cooled. This type, with a retractable landing gear, is of the Gull-wing design, the "V" in the wings allowing the pilot to look back to

the rear of the aeroplane. The engines *nacelles* are of the streamlined type, located below the wing and above the landing gear. The sides of the fuselage and the vertical fin are covered with corrugated metal, while the engine *nacelles* and the nose of the aeroplane are covered with plain sheet metal, the wings being covered with regulation fabric. These machines are actually light bombers, carrying 2,000lb. of bombs and a crew of three men. No information as to their performance has been released, as they are still on the secret list, but they closely approach the 175-mile an hour mark, and have a wing span of 65ft. with a chord of 10ft. 2in. The 31st Bombardment Squadron is equipped with these machines.



THE BOEING P-26 : General arrangement outline drawings.



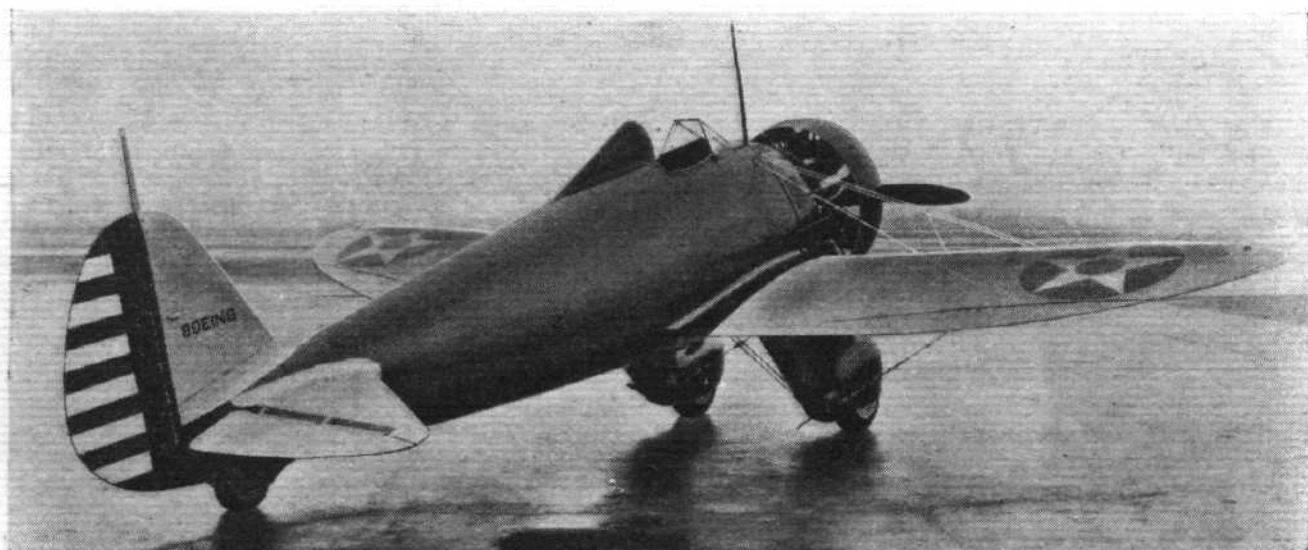
THE CURTISS "SWIFT" : General arrangement outline drawings.

Second of the monoplane bombers is the Fokker B-8, produced by the General Aviation Corporation. This machine has a tapered wing flush with the top of the fuselage. The engine *nacelles*, housing two Curtiss "Conqueror" engines, are built directly into the wing above the landing gear. The landing gear is retractable and electrically operated, and, as in the Douglas B-7, the wheels swing back into receptacles in the under part of the engine *nacelles*, being mounted on parallelogram linkages. The fuselage, fin and wings of this machine, also classed as a light bomber, are fabric-covered, while the nose is covered with corrugated metal. These machines carry a crew of three in tandem, and are the equipment of the 30th Bombardment Squadron.

A heavy bomber showing great promise is the Boeing B-9. These machines are all-metal of *semi-monocoque* construction, and are of the low-wing type with two Pratt and Whitney "Hornet" SGIR-1860B engines of 600 h.p., built into the wing directly above the retractable landing gear. An outstanding feature of these aeroplanes is that they are equipped with a servo rudder that assists the pilot in handling his craft without the tiring effects caused by most large machines. While very little information is let out on this type, which exceeds the 200 m.p.h. mark, it is known that they have a service ceiling of 22,600ft. with full military load and 2,000lb. of bombs. The machines

weigh 13,350lb., have a span of 76ft. 11in., a length of 51ft. 9in., and a height of 11ft. 7in. The chord at the greatest width is 15ft. A provisional squadron of the 2nd Bombardment Group is supplied with them.

When the Army Air Corps believed that they had reached the ultimate in fast bombers, the Glenn Martin Company came forward with the squat-looking Martin B-10 and B-12 that are identical in appearance but have a few minor changes in equipment. (See *Flight* of February 15, 1934.—ED.) These machines have two-gear Wright "Cyclone" engines of 650 h.p. built into the wings. They carry a bomb load of 2,500lb. at a speed of 220 miles per hour. The wing and fuselage construction in the Martin is something entirely new, the latter being of the "restrained shell" construction that provides extreme strength and rigidity with approximately half the weight of the *monocoque* type. Another feature of these machines is that the front gunner is completely enclosed in a transparent turret which affords the forward guns an effectiveness never attained before in high-speed aeroplanes. (The latest Boulton and Paul "Overstrand" has an improved gun turret in the nose.—ED.) The retractable landing gear when drawn up gives the machine the impression of a huge



A PURSUIT TYPE : The Boeing P-26. The engine is a Pratt and Whitney "Wasp" of about 600 h.p.



THE CURTISS "SWIFT": Note the enclosed cockpit. The engine is a "Conqueror."

fish flying through the air. The dimensions are: Span 70ft. 6in., length 44ft., height 11ft. 6in., chord 11ft. 3in. These aeroplanes are assigned to the 9th and 11th Bombardment Squadrons, while two other squadrons will also be similarly equipped as soon as the machines can be delivered.

Chief among the new pursuit developments is the Boeing P-26, a sleek low-wing all-metal monoplane which has gone into quantity production. One hundred and eleven of these machines have been ordered, and the first deliveries are being made to the 34th, 73rd and 95th Pursuit Squadrons, replacing the Boeing P-12E type now in service. Three other Pursuit Squadrons will also be similarly outfitted. The fuselage of the P-26 is of streamlined *monocoque* construction, while the wings like the fuselage have smooth metal skin covering. The wing is equipped with automatic slots which come into operation of their own accord at stalling speeds of fifty miles an hour, or they can be controlled or locked by the pilot at will. The landing gear is not of the retractable type, but is composed of streamlined "pants." Powered with a Pratt and Whitney "Wasp" engine of 600 h.p., the P-26 has a top speed of over 220 miles an hour, and was built as the answer to the increased bomber speeds. The dimensions are as follows: Span 28ft., length 23ft. 7in., height 8ft. 8in., chord 6ft., with 4 deg. of dihedral. A later version of the P-26 is the P-29, similar in all respects with the exception that it is provided with a retractable landing gear that allows a further increase in speed. These machines are now under test.

Also undergoing service tests is the new Curtiss "Swift" or P-31, fitted with the Curtiss "Conqueror" V-1570

675 h.p. engine. This is a low-wing, all-metal, single-seater pursuit monoplane with automatic slots and flaps. The pilot's cockpit is enclosed by a transparent hood that allows unhindered visibility at high speeds and in deep dives. The span of this machine is 36ft. and the length is 26ft.

The two-seater Pursuit type was not passed by in these new developments, and five aeroplanes known as the Detroit P-24 have been delivered for trial. These are low-wing, all-metal of the noted Lockheed type, and have streamlined *monocoque* fuselages and a speed well over 200 miles per hour. The standard two-seater Pursuit machines now in use are biplanes of the B.J. P-16 type, in service with the 94th Pursuit Squadron. The very latest version is the Consolidated P-30, a modification of their P-25. This is also a two-seater, fitted with the "Conqueror" 700 h.p. engine, and so new that no information is available as to its performance. Needless to say, it is also of low-wing design.

(To be concluded next week.)

[An interesting sidelight was thrown on the subject of this article the other day when we had a caller from the other side of the "Herring Pond" who has been in close touch with American service aviation developments during the last few months. According to him, the Americans are definitely getting very spectacular performances out of their new military monoplanes. For example, the Boeing P-26 is reported to have attained a speed of over 300 m.p.h. in level flight when not carrying its military load. A new Northrop low-wing monoplane is stated to have reached a speed of 500 m.p.h. in a terminal velocity dive.—ED.]



A TWO-SEATER PURSUIT TYPE: The Consolidated P-25 is being followed up by a later version, the P-30, with Curtiss "Conqueror" engine.

PRIVATE FLYING

A SECTION FOR OWNER-PILOTS
AND CLUB MEMBERS

THE Air Navigation (Amendment) (No. 2) Order, 1934, issued on June 29, 1934, which decrees that no person under the age of seventeen shall have sole control of an aircraft in motion, was received with mixed feelings. The time which has elapsed since the Order was published has given opportunity for reflection, and certain points, appearing to justify a call for its modification, suggest themselves.

Following as it did on the undue publicity given to certain solo flights by very young people of both sexes, it has been thought by some to be in the nature of panic legislation. One can certainly sympathise, however, with a decision which renders impossible the exploitation of such feats by the sensational Press, a form of publicity not in the best interests of aviation. There might seem to be a case for the new regulation by virtue of the fact that a person under the age of seventeen is debarred from driving a car. The circumstances cannot be said to be comparable, however, as there is, of course, no legislation prohibiting young people from driving a car on private property. The regulation lays down a rule that the person under the age specified shall not be *in sole control*—and it is presumed that this means within the confines of an aerodrome or a private landing field, whether taxiing on the ground or while in the air, as well as outside the three-mile limit. On the other hand, it would appear that those below the age limit may pilot an aircraft, at least within the prescribed area, provided the machine has dual control, and, in addition, that they are accompanied by a qualified pilot. If this latter supposition is correct, it may be thought that the regulation is not unduly restrictive.

Pilots of the Future

IT must be remembered, however, that if the young enthusiast, who may have arrived at a state of efficiency which would secure him an "A" licence had he attained the age of seventeen, must, if under that age, take the more expensive course of being accompanied by a qualified pilot whenever he wants to fly. This not only constitutes a hardship, but is a policy which, if continued without revision, may react to the disadvantage of our future pilots. Whilst, of course, it is not suggested that a pilot should be allowed a full certificate earlier than is at present the rule, there does seem to be reasonable grounds for encouraging the youth of to-day to develop that essential air sense which can be inculcated so much more readily at an early age. It is usual to speak of a first-class pilot as having "good hands," the analogy being that of good horsemanship. This is perhaps an apt comparison, for the fine horseman is invariably the product of a training which commenced as a child, a condition which is considered to be absolutely essential. To a much greater extent than is the case with motor driving is it desirable to initiate the would-be pilot at an early age. Whilst the art of pilotage is not a particularly difficult one, and persons of almost any age may, with proper application, become reasonably efficient, there

are certain attributes which may be described as inherent rather than acquired. Fine airmanship is something more than studied efficiency, and, although aviation is now only in its infancy, man is undoubtedly destined to look upon the air as a natural element. This means that the affinity of the pilot and machine will, as time goes on, be more and more marked. It is not suggested that the control of the aircraft should solely depend on the natural skill of the pilot. As aviation develops, the airman will employ an increasing range of mechanical aids, but in the proper utilisation and co-ordination of these the fundamental attributes of air sense will always be necessary.

It must be admitted that in many of the arts inherent talent may be neutralised by lack of early training. With the growing use of the airways it becomes increasingly necessary that those who control aircraft shall be as much at home in the air as the birds themselves. They must be quick to react to any emergency and must cultivate faculties, such as keen sense of anticipation, which cannot be imparted. The future safety of air traffic depends a great deal on the general distribution of *air sense*, and, therefore, any restriction on the young pilot of either sex needs to be very carefully examined and its consequences realised. A stolid driver of a motor car may or may not be a danger on the crowded roads, but a sky filled with machines controlled by "ham-handed" pilots would be a sorry prospect.

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Special Training Centres?

ASSUMING, therefore, the desirability of training our airmen at an early age, how may the regulation which now exists be modified to assist this end? If we are to restrict a boy or girl to flying under the surveillance of another person, we should realise that in so doing we may help to stunt those faculties of initiative which develop so much more naturally at that stage. Moreover, there are opportunities between the ages of fourteen to seventeen which may not come readily later in life. Between those ages the youngster will be at school, and his long holiday periods offer an exceptional chance of undergoing training of a preliminary nature.

Under the circumstances it might, therefore, be suggested that at certain specified centres, and subject to appropriate conditions, persons between the ages indicated might be allowed to fly solo within an observed area. A common viewpoint on the importance of this concession would have to be arrived at by both the controlling authorities and also by the insurance companies, before such a scheme could be successfully adopted. Properly organised, there should be no undue danger or difficulty in working such an arrangement, and it would undoubtedly help to bring into being a considerable flying personnel trained at the most responsive period of their lives. I have taken every opportunity of giving my two daughters flying instruction, so that at the ages of fourteen and twelve respectively only the age limit prevents them from taking their "A" certificates.

NOTES

by

LORD SEMPILL

A.F.C., F.R.Ae.S.

A Machine for the Multitude

WHILST visualising the future, in so far as the training of our youth is concerned, it is appropriate to make a reference to an aircraft which will, without doubt, have a great influence on the future of flying.

The autogiro has made a great impression on the minds of the public, and it was, therefore, with regret that one read the over-optimistic reports in the Press of the imminent production of this type at a price which, of course, is out of the question at the present time. The Weir single-seater Autogiro is a machine of great promise, but its designer would be the last to assert that he is as yet

satisfied with it in every respect. Apart from previously untried modifications to the rotor system, a special two-cylinder, air-cooled engine has been designed, and the makers are naturally anxious to give both the engine and machine the most exacting tests before putting either into production. The present success of the Cierva Autogiro is due to the extreme care taken by its designer at each stage of its development. When this little machine becomes available to the public, it will not only be one of the cheapest aircraft obtainable, but will embody that large margin of safety so important in a "machine for the multitude."

"W-2"
10702



The first published photograph of the experimental Weir Autogiro taken in the air as it was flown by Mr. H. A. Marsh near Hanworth. Its diminutive size is apparent with the cockpit occupied. Tests are still being carried out. (Flight Photo.)

AIR SERVICE TRAINING

A Record Flying Month: Two New Trophies

HAMBLE continues to attract airmen and prospective airmen from all over the world. During the past month Capt. L. J. Brain, the chief pilot of Quantas, arrived to undertake special instrument flying and night flying courses. Another new pupil is Madame E. M. Sauvy, perhaps better known as "Titayna," the French travel writer, who is qualifying for her "A" licence.

From Sweden comes Mr. F. G. Egnell for his "A," while Mr. Yusef Kafafi from Egypt is taking a course in air photography. Mr. Garcia Ogara, from Spain, is taking a short flying course on the Avro "Cadet," and Mr. T. M. McGrath, from Newfoundland, is taking "B" licence, instrument flying and wireless courses.

Other new arrivals include Mr. R. E. Gardner, Junr., for advanced flying instruction; Mr. K. M. Cass, for a second class navigator's licence; and Mr. W. H. Crowther, who is taking a short instrument flying course.



The A.S.T. Navigation Trophy.

The very creditable results obtained in recent Air Ministry examinations reflect the high standard of technical instruction at the school. Mr. A. R. O. McMillan, one of the school instructors, obtained his first class air navigator's licence, so that there are now two first class and one second class navigators on the staff. Two students, Flt. Lt. N. C. Dudding and Mr. E. J. Finnigan, obtained their second class licences. An examining board for ground engineer's licences sat at Hamble during July, "A" and "C" licences being obtained by Messrs. Hamilton, Hornby, Needham and Truran.

A total of 1,276 flying hours, which is almost twice that in the corresponding month of last year, constitutes a new school record. On July 10 a single day's flying record was set up when the school machines flew a total of 71 hours 25 minutes. The staff has been increased by the appointment of F/O. A. E. Smith, R.A.F.O., as assistant chief ground instructor. Mr. Smith was air pilotage instructor in the Royal Air Force.

Two ex-pupils of A.S.T. have added to the number of trophies which are competed for by pupils. One, known as the A.S.T. Flying Trophy, has been presented by Mr. R. E. Gardner, and the other, the A.S.T. Navigation Trophy, is the gift of Mr. W. D. Campbell.

The first competition will be held bi-annually, and is open to pupils who have completed a minimum of fifty hours' solo flying at the school. The contest is divided into two parts: (1) aerobatics, and (2) pin-pointing over a triangular course. The marks gained in the two parts will be added together, and the trophy, which was won for the first time by Mr. R. M. Coull, will be awarded to the competitor with the highest aggregate.

The Navigation Trophy, which takes the form of a silver globe, will be awarded annually to the pupil obtaining the highest marks in the examination for the second class navigator's licence.

Private Flying**ACROSS COUNTRY**

To the novice, navigation often appears to be an affair involving complicated calculations and a knowledge that can only be gained by prolonged study. Actually, however, the principles necessary for normal cross-country operations are simple in the extreme. This article is intended for the novice and deals with many of the problems that are likely to worry him

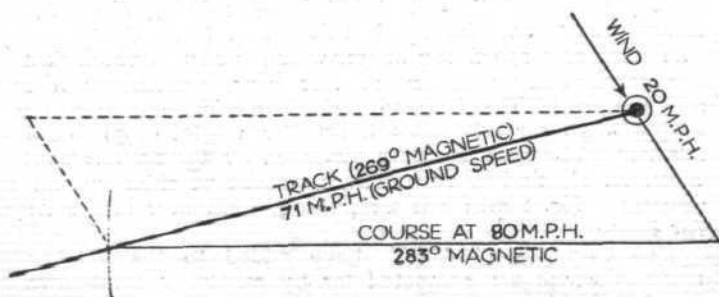
NOW that club instruction has reached such a state of perfection the embryo pilot who feels a sense of helplessness when the clearly marked railway line fails to turn up at the psychological moment is something of a rarity.

Nevertheless, there are all manner of things to be thought of in one's early point-to-point flights, and if these can be at least partially settled on the ground then so much the better. If he has a clear mental plan of operation then the novice will not be quite so perturbed if his map blows away down the fuselage, or if he finds himself quite suddenly in thick weather.

Confidence and routine are the secrets of mental comfort when the entire landscape bears no apparent resemblance to that depicted on the map. The first will prevent you from being "rattled," and the second will enable you to pick up your course again.

Routine starts on the ground, so plan everything carefully and unhurriedly. Draw your track boldly on the map and write the magnetic course (or the true course plus deviation) beside the line. Such a figure will be invaluable if bad weather sends you home again—mental calculations are difficult to carry out in the air. I prefer to draw my track in red or black ink, knowing that the folds of a cheaper map wear through soon enough in any case.

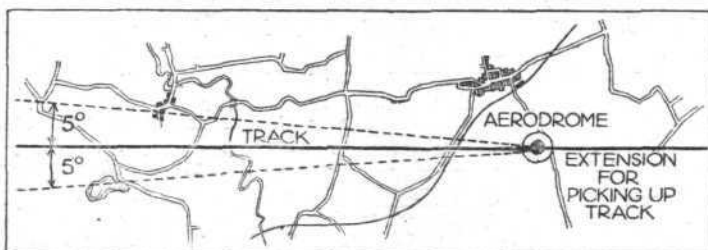
In due course experience will enable you to obtain a fair idea of wind speed and direction by watching the wind sock, but information is obtainable at most aerodromes, and, armed with this, a velocity triangle can be drawn or a course and drift calculator operated. The simplest way to treat a velocity triangle is to visualise the wind as blowing the machine away a certain distance in the hour before, so to speak, starting an hour's flight in still air.



The simplest form of "velocity triangle," in which the wind is imagined as blowing the machine away from the starting point.

Actually, however careful you may be, corrections will have to be made in the air. East winds have a little habit of changing their direction higher up, and west winds of increasing their velocity.

From the diagram or the C.D.C. the actual ground speed can be judged, and, if the track is marked at suitable time intervals, according to the length of the flight, you will know exactly where you are at any moment. But more of this later.



How "five degree lines" help the pilot to judge necessary alterations to course.

track from the starting point, so that you will more easily be able to judge the amount of drift and readjust so accurately that no more course alterations are necessary. For instance, after five minutes' careful compass flying the machine may pass over a certain landmark some miles off the track. One or other of the lines will then give you a perfect visual idea of the number of degrees of your drift. If, while still in home country, you proceed to fly across to a landmark shown on your track line, then you can make the necessary alteration with confidence. The time taken in getting back to the track may appear to be wasted, but it is at least a sure method for the beginner.

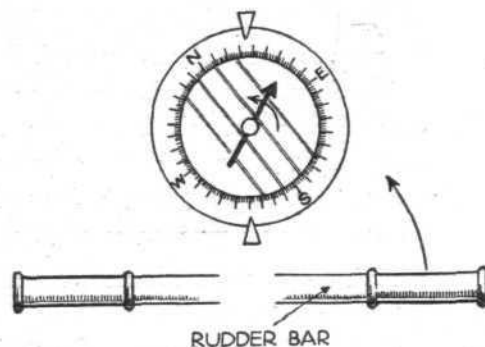
A really useful thing to remember is that if you are altering course to the right then you must *add*, and if the track is on your left then you must *subtract* the number of degrees of error. I always found that the best way of changing course was to "push the compass"—in other words, to press the rudder in the direction in which I required the needle to move. Later on, the rudder corrections will be made quite automatically.

Compass movements often mystify the novice, even though he may have been told all about "northerly turning error." The crux of the matter is that the compass reading can be relied upon completely so long as the machine is, and has been, flying steadily. For all normal purposes it is enough to note that the needle lags well behind the turn on northerly courses—as much as 40 degrees in a 90-degree gentle turn—and that it tends, perhaps, to go ahead on southerly courses. Actually, however, the compass can be treated as a perfect turn indicator whenever the machine is flying southerly.

Even on northerly bearings it is possible to turn with accuracy by compass through wide angles. As the pupil of "blind flying" discovers, very accurate changes can be made with the help of a turn indicator and a memorised series of corrections.

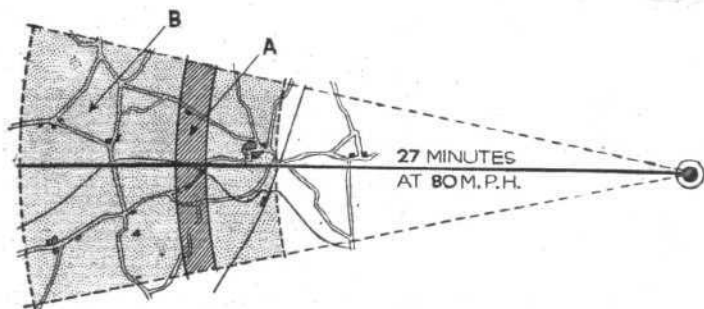
The initial temptation to compare map and landmarks continuously from the moment of leaving home, if persisted in, can, on long flights, become most wearing to the nerves. After all, lakes, reservoirs and woods show

Certain additions to a plain track line on the map will be found to be extremely useful. An extension "behind" the starting point will enable you to pick up your track on the other side of the aerodrome, so that, as you pass over the circle, all will be set and fair. "Five-degree lines," too, should be drawn a little distance on each side of the



"Pressing the compass." How the needle reacts to rudder pressure.

up really well under nearly all conditions, and it is a little foolish to make a protracted study of a road-cum-rail junction when a perfectly good reservoir, of unique shape, should be appearing in five more minutes. This is



Showing the advantage of careful clocking. The area B is that in which a pilot can be "lost" if time is not taken into consideration, whereas he must be somewhere in area A after, say, 27 minutes.

where the calculated ground speed and the marked time sections will prove so useful.

Use your watch, keep your cruising speed constant, and you will know to within a minute or two, either way, when the next course-checking landmark is due to appear. And, in the meantime, why worry? If you are "lost," careful clocking will reduce the area of possibility, and you will be able to continue flying with confidence on your original course, knowing that, when a railway line is eventually picked up, there should be no question of its identity, though, unfortunately, it is not difficult to be led astray by mineral lines in industrial or mining districts. Many of these lines are not marked at all.

Finally, when the landscape is really strange and you have forgotten your starting time, *don't* tear round in circles, but trust your compass implicitly and carry on firmly until, as a certain excellent instructor once remarked, "some really handsome landmark appears—a large reservoir, London, or the North Sea."

H. A. T.

FROM THE CLUBS

Events and Activity at the Clubs and Schools

WITNEY AND OXFORD

A total of 24 hr. 35 min. flying was done during last week, and Mr. S. G. Smith passed his "A" tests. Gusty winds have, however, delayed several first solos. Two machines went over to the Cotswold Club's garden party.

HERTS AND ESSEX

The club is organising its first "aerofête" for Saturday, September 15, at 3 p.m. Visiting aircraft will be welcomed, and all will be made members for the day. Numerous attractions are being arranged, and those in the afternoon will include a visitors' handicap race (entries taken on the field) and a concours d'elegance for cars. Prizes to be won will include a genuine firkin, a real live pig, and a return flight to Paris.

W. J. Alington has been appointed assistant pilot.

MIDLAND

The Midland Aero Club is holding an informal garden party on September 8, and a cordial invitation is extended to all private owners and club members.

There will be an arrival competition, and several other interesting events, which, it is hoped, will be well supported. In the evening a "club house" dance will be held. Free hangarage will be provided for all who care to stay.

It will be appreciated if intending visitors will notify the secretary.

HATFIELD

Mr. Place set out from the London Aeroplane Club on Tuesday last week for South Africa in his Gipsy Major "Moth," of which he has just taken delivery, and the club hopes to see him back in about six weeks. He almost needed a second machine in which to carry all the necessary papers for his trip, and, as far as formalities go, it appears there will need to be a speed-up in getting papers through before aviators can fly to any part of the world within a week's notice. It has taken Mr. Place about eight weeks to get them.

COTSWOLD

A short and excellently carried through flying programme, lightened with numerous amusing side-shows, was provided for the visitors to the garden party held by the Cotswold Aero Club last Saturday.

The club still operates on a small aerodrome on the main Gloucester-Cheltenham road but Mr. King, who rules their destinies, tells us that the municipalities of those two towns have at last come to an agreement about the large site on the opposite side of the road, and before very long this will become their joint airport. It will be leased by Mr. King, and the club will then be transferred. At the present time all club instruction is done from a field near Cirencester, as their own aerodrome is too narrow when the wind is blowing across it. This does not, however, appear to deter members from joining the club, nor does it tend to limit the number who fly. Actually out of 150 members, over sixty are flying members—a very high proportion indeed.

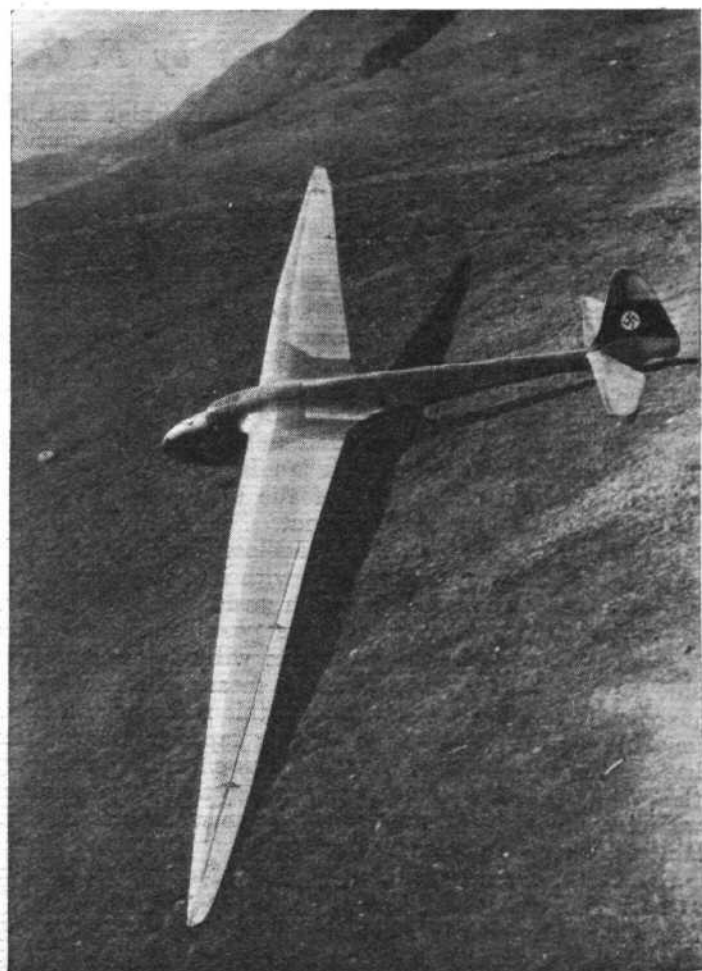
READING

Events during the coming month at Woodley include a dawn patrol on the 9th, a treasure hunt on the 16th, and an "end-of-season" tea party on the 23rd.

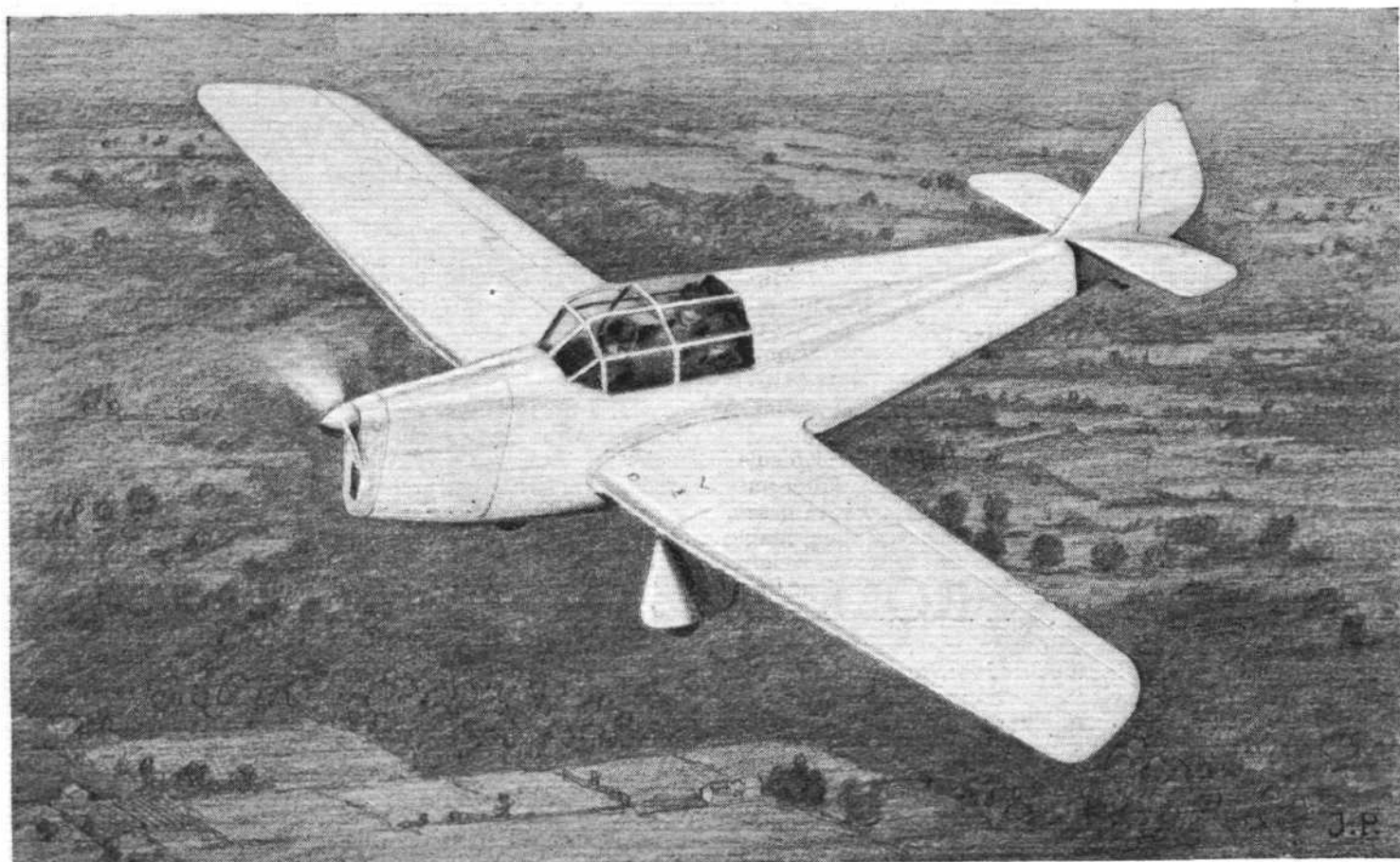
CAMBRIDGE

Four new members joined Marshall's Flying School last week. Mr. L. Paterson passed his "A" licence tests, and Mr. A. E. Earwicker made a first solo. Charter flights were carried out to Le Touquet and Birmingham.

(Other Private Flying news appears on p. 877.)



A RECORD BREAKER: The sailplane *Fafnir II* with which Heini Dittmar flew a record distance of 235 miles between the Wasserkuppe and Liban (Czechoslovakia) during the Rhoe gliding contest



NEW CABIN MONOPLANE

The "Falcon," Designed by F. G. Miles, to Carry Three or Four Persons

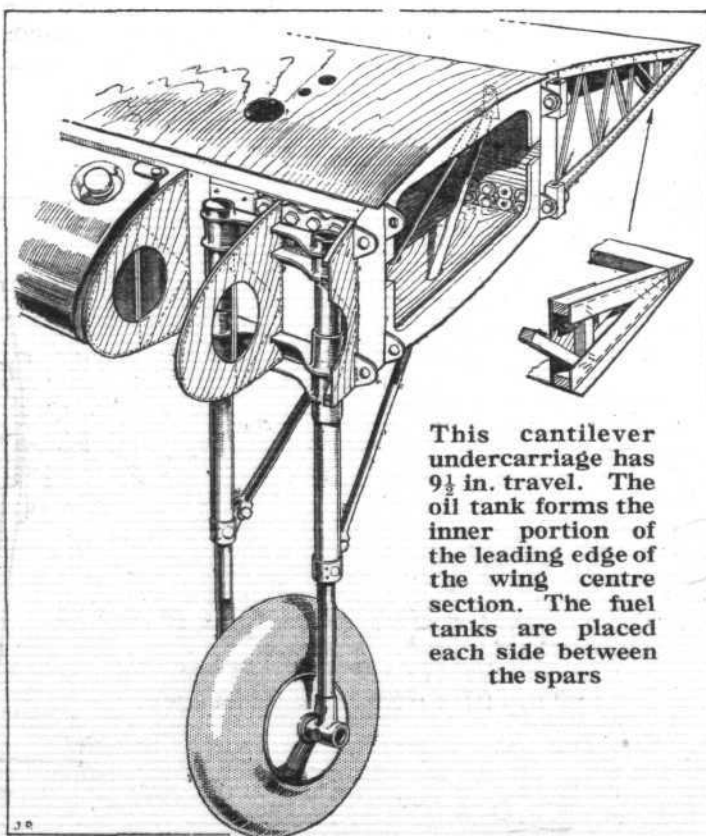
REAL comfort for three or four persons, high cruising speed, easy flying characteristics, and unusual robustness of construction, are the chief features of the new Miles "Falcon."

One of these machines has been entered for the England-Australia air race by Mr. H. L. Brook, so the performance of the first model, which will be flying very shortly, is awaited with particular interest. The "Falcon" is a logical development of the "Hawk Major," in which particular attention has been paid to providing really comfortable seating for the passengers and to flying qualities of the kind which will make it possible for relatively inexperienced pilots to fly in and out of confined spaces. The "Falcon" will not have a landing speed appreciably greater than the 40 m.p.h. of the standard "Hawk," which is particularly easy to land.

Mr. Miles, as in his other machines, has, despite the cleanliness of the whole machine with its consequent high cruising speed, managed to retain steep and slow gliding characteristics, so that it will be possible to bring the "Falcon" down over high objects without necessitating side slipping or any other aerobatic means of losing height just before landing. Furthermore, this machine will later be available with a new form of wing flap, which Mr. Miles has developed, and this will have the effect of decreasing the gliding speed by some 15 m.p.h., so that when landing with the flaps down, and by using the wheel brakes, the landing run need not exceed 70 yards.

Generally, the construction of the "Falcon" is similar to both the standard "Hawk," and the "Hawk Major." The wing is extremely rigid, and has a plywood covering enclosing box-section, spruce and plywood, spars. The ribs are normal girder construction, of spruce with plywood "biscuits" at the joints. The plywood wing covering is glued to these ribs, and obviates the use of any other bracing between the spars. It will be remembered that when the "Hawk" first came out, Phillips and Powis,

in their factory at Reading aerodrome, made good use of factory methods calculated to assist economical production. For instance, the way they achieved this glueing-on of the plywood was with a simple form of office stapling machine, which clamps the plywood to the ribs, and, for that matter, to the longerons and struts in the case of the



This cantilever undercarriage has 9½ in. travel. The oil tank forms the inner portion of the leading edge of the wing centre section. The fuel tanks are placed each side between the spars

fuselage, until the glue is dry. After this the staples are removed so that a perfectly clear, clean surface is left, helping considerably with the production of that particularly high-class finish of all Miles' "Hawks."

The fuselage is also of the box type of construction, using spruce and plywood. There is a welded steel tube structure over the spacious cabin, covered with transparent celluloid with unbreakable glass in the front. One side of this structure hinges forward, forming a door of ample size for getting in and out of the cabin.

The normal seating accommodation, when a "Gipsy Major" engine is fitted, is for three persons, the pilot sitting in front, slightly to the left-hand side, and his two passengers behind him on a well-padded seat, very similar to that found in most modern motor cars. The seat itself and its back rest is right across the fuselage, and has a collapsible arm in the middle.

Where it is wished to operate the "Falcon" as a regular taxi machine, or on feeder lines, or from large aerodromes only, it is quite possible to carry another passenger beside the pilot, while still being able to carry a reasonable amount of luggage without exceeding the C. of A. weight. In this case, of course, the operator will not be justified in expecting quite such a good take-off, but in other ways the machine will be no different from the three-seater.

When fitted with the "Gipsy Six" engine, a considerably better speed is expected. At the time of writing, the "Falcon" has not flown, and the performance figures are not, therefore, included in our table. While not wishing to dogmatise on the matter, the designer confidently expects a top speed and cruising speed of 136 m.p.h. and 120 m.p.h. respectively for the "Gipsy Major" engine, and 160 m.p.h. and 140 m.p.h. for the "Gipsy Six."

The undercarriage is the same cantilever type as is used in the "Hawk Major," except that medium-pressure tyres will be fitted. Our sketch fully explains how this neat form of landing gear is attached to the centre-section spar. By means of carefully planned fairings over each half of the undercarriage, the drag has been reduced to a very low figure, so low that Mr. Miles is convinced that the cost and weight of fitting a retractable undercarriage is not justified in a machine of this type.

As we have said already, one of the chief aims which has been kept in mind in designing the "Falcon" is to produce a machine which above all things shall be easy to fly, and by a slight increase of the dihedral angle over that of the "Hawk," that is, from $3\frac{1}{2}$ deg. to 5 deg., the "Falcon" has been made sufficiently stable to fly "hands

MILES "FALCON"

"GIPSY MAJOR" 130 H.P. ENGINE.

DIMENSION		ft.	in.	m
Span of wing	...	35	0	(10.7)
Height overall	...	6	5	(2.0)
Length overall	...	25	0	(7.6)
Wheel track	...	8	0	(2.4)
Mean chord	...	5	3	(0.6)
Aspect ratio	...	6.7 to 1		
Incidence	...	1.5 deg.		
Dihedral	...	5.0 deg.		

AREAS		sq. ft.	m ²
Main plane with ailerons	...	174.3	(16.17)
Ailerons (two)	...	17.4	(1.62)
Tail plane	...	17.2	(1.58)
Elevators (two)	...	8.4	(0.78)
Fin	...	7.24	(0.71)
Rudder	...	7.24	(0.71)

WEIGHTS		lb.	kg
Tare weight	...	1,300	(589.7)
Disposable load	...	1,000	(453.6)

		kg	
Crew	...	160	(72.6)
Fuel	(33 gall. 150 p)	250	(113.4)
Oil	(3 gall. 14 l)	30	(13.6)
Pay load	...	440	(199.6)
Gross weight	...	560	(254.0)
	...	2,300	(1 043.3)

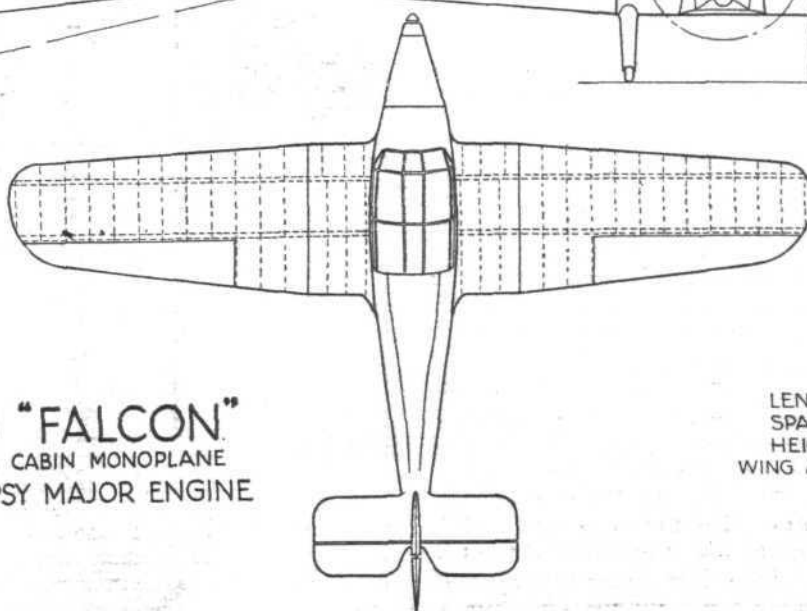
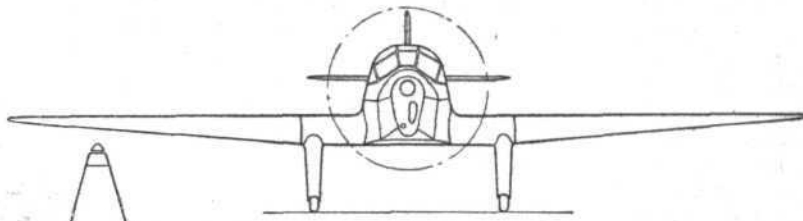
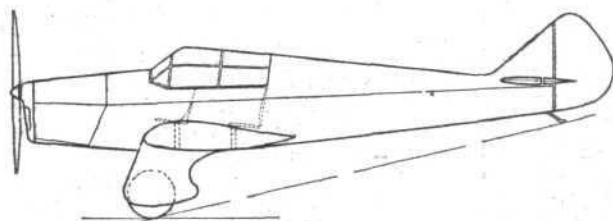
LOADINGS AND RATIOS

Wing loading	...	11.5 lb./sq. ft.	(56.15 kg/m ²)
Power loading	...	16.1 lb./h.p.	(7.30 kg/hp)
Ratio of gross weight to tare weight	...	1.75 to 1	

and feet off" for long periods, while at the same time retaining ample manoeuvrability for handling while landing, or during emergencies, with great ease.

In the matter of upkeep, the "Falcon" should be just as good as any other "Hawk." The absence of bracing wires and outside fittings are points in its favour, which, taken together with the robustness of its general construction, make it a machine which will stand up to a good deal of hard work, and which will only cost a very small sum when the annual renewal of C. and A. is made.

Phillips and Powis have now had considerable experience in operating "Hawks" for school work, and their figures show that the type is very economical. The owner of a "Falcon" need not, therefore, expect that because he is getting a larger machine his maintenance costs will go up to any great extent.



MILES "FALCON"
3-4 SEATER CABIN MONOPLANE
130hp.D.H.GIPSY MAJOR ENGINE

LENGTH.....25'-0"
SPAN.....35'-0"
HEIGHT.....6'-6"
WING AREA... 174.3 Sq.Ft

THE FOUR WINDS

ITEMS OF INTEREST FROM ALL QUARTERS

Prince George in Yugoslavia

On August 16 Prince George flew from Le Bourget to Ljubljana in a machine belonging to the Prince of Wales, to visit the Yugoslav Royal Family. The machine landed at Munich and flew over the main chain of the Alps, the Corinthian Lakes, and the Karawanken range, which forms the frontier of Austria and Yugoslavia.

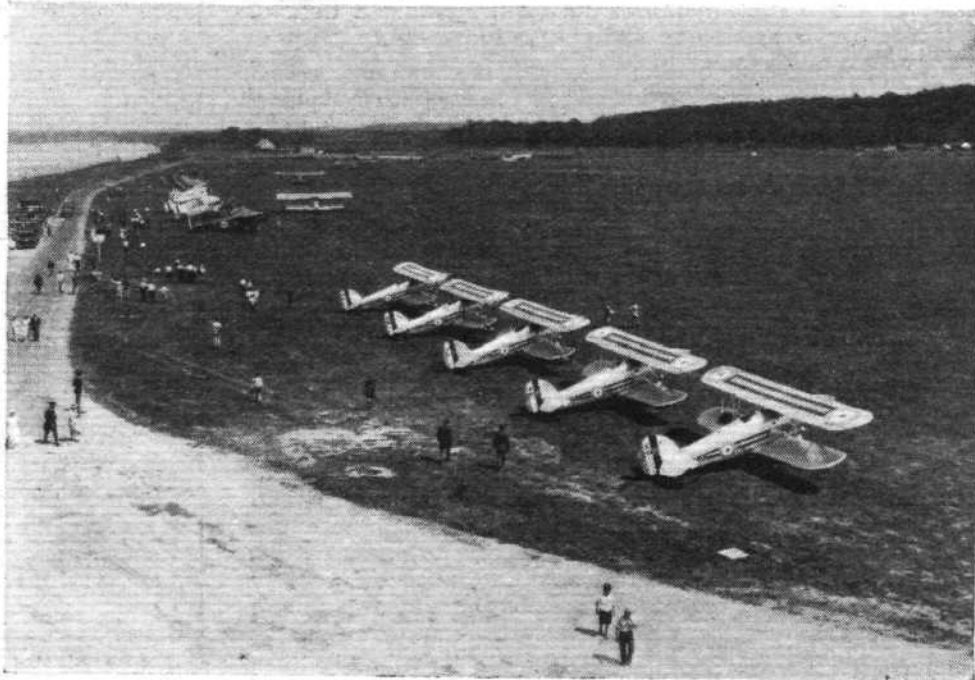
Autogiro's Flight to Oslo

Mr. Bjoerneby, a Norwegian pilot, recently flew in an Autogiro from Manchester to Oslo—a distance of about 1,305 miles—in 12½ hours.

Twenty-five Years Ago

From "Flight" of August 21, 1909

... Further, Orville Wright stated that he had no intention of flying across the Channel or attempting to fly across the Atlantic. He and his brother were rather striving to improve their aeroplanes, and their latest models could carry petrol to last 25 hours or for 1,000 miles at 40 miles an hour. They could also, if necessary, carry three men, but there was no demand at present for machines which could carry more than two. . . ."



FURIES IN CANADA: A line of aircraft which took part in the demonstration at Ottawa in July.

A Guynemer Memorial

A memorial to Capt. Guynemer on the sea wall at Malo les Bains, near Dunkirk, was unveiled by General Denain, the French Minister for Air, on Sunday last.

Latest Stratosphere Ascent

M. Max Cosyns and M. Van der Elst ascended in a balloon from Hour-Havenne, Belgian Luxembourg, early on the morning of Saturday, August 18. After drifting nearly 1,000 miles across Europe the balloon landed at Zenalvje, a small Yugoslavian village. During the trip the balloon reached a height of 52,329 ft. The balloon was the same as that employed by Professor Piccard on his first stratosphere ascent in 1931, and on his second expedition in 1932. A new aluminium gondola was fitted.

Victor Smith Returns

Mr. Victor Smith, who made a forced landing in the African desert while attempting to fly from Capetown to London, is now in this country. He tells of how he hid behind sand dunes from bands of natives, who, he said, would have as soon cut his throat as bother to get a ransom for him. He intends to return to Africa and to take up a position with West African Airways.

Pond and Sabelli Crash

Capt. George Pond and Lt. Cesare Sabelli, who, during May, flew the Atlantic from west to east, crashed last Sunday in Wales on a hillside near Newport. They were flying from Rome to Dublin, and intended to make a return flight to America. Their Bellanca machine was badly damaged, but the airmen were only slightly hurt.

Sir Miles Lampson's Accident

While flying solo at Dekheila Aerodrome, a machine piloted by Sir Miles Lampson, the British High Commissioner, overturned on landing. Sir Miles escaped without injury.



REGIMENTAL VISITING CARDS: Badges carved in the hillside by British Regiments which have been stationed at Gebeit, 50 miles south of Port Sudan, Red Sea Province. The Regiments are: South Staffordshire, Coldstream Guards, 2nd Bat. Manchester Regiment, King's Liverpool Regiment, and the King's Own.



FOR JAPANESE COMMUNICATIONS: Built by the Kawasaki Dockyard Co., Ltd., of Hyogo, Kobe, the K.D.C.-5 shown here is a three-seater monoplane intended for rapid communication work. Fitted with a Kawasaki IX liquid-cooled engine of about 800 h.p., the top speed is claimed to be well over 200 m.p.h., the ceiling more than 20,000 feet and the endurance about 7 hours.

Second "Floating Aerodrome"

The experiments made with the S.S. *Westfalen* as a "floating aerodrome" in mid-Atlantic have proved so satisfactory that it has been decided that a second vessel is necessary. The *Schwabenland*, as the new vessel has been named, will be stationed off the African coast, and the *Westfalen* off the South American coast. It is planned that the new vessel will take on board the outgoing flying boat in the evening, steam to sea with it during the night, and launch it by catapult next morning. The programme for the *Westfalen* is similar. Both vessels will be able to refuel the Transatlantic aircraft at the end of their flight. Although the service will at first be operated each fortnight, it is expected that later it may be run weekly. The *Schwabenland* can accommodate three flying boats at one time. Since February Lufthansa machines have made twenty-two Transatlantic flights, carrying about 22,000 letters on each trip.

Indian World Flight

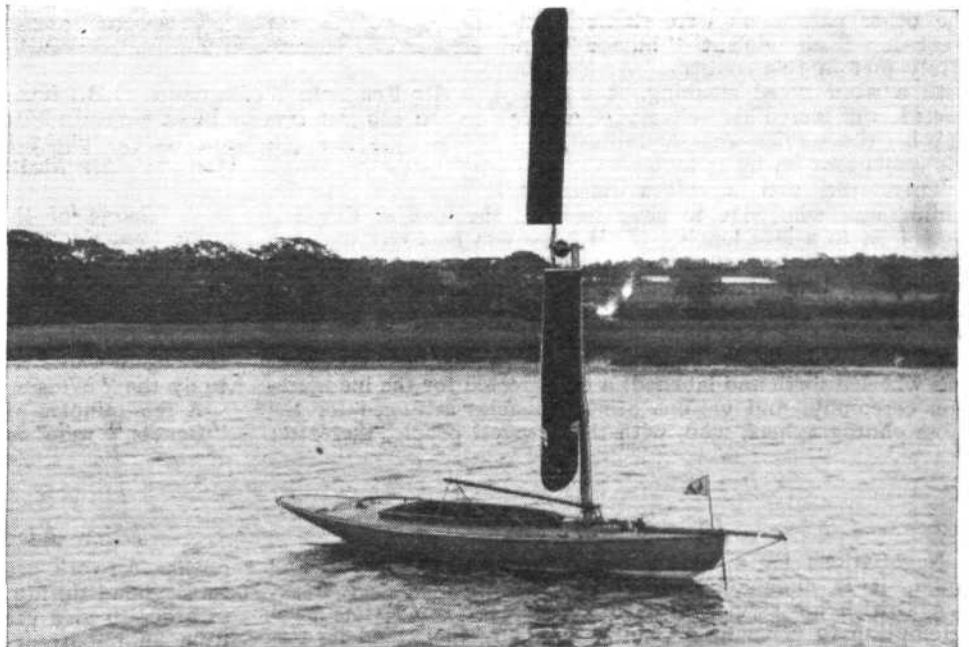
Since Mr. R. N. Chawla, the Indian airman, set out from Karachi on July 20 in his "Puss Moth," with a view to flying round the world, little news of his progress came to hand. At one time, in fact, he was reported "missing" after leaving Gwadar, but it seems that he was really proceeding on his journey "according to plan." Anyway, he arrived safe and sound at Heston a short while back, and is shipping his machine to New York, whence he will fly to San Francisco, then by ship once more to Japan, and so on by air back to India.

Air Search for Explorers

A Wilson Airways' "Puss Moth" carrying Mr. Millard, the archaeologist, and Mr. MacInnes, is searching for the two members of the Lake Rudolf-Rift Valley expedition, who have been missing since the end of last month. The machine is carrying rifle ammunition, food, and, as petrol is not easily obtainable beyond Nanyuki, a heavy load of fuel.

Woman Parachutist Killed

Mlle. Joan Perrot was killed last week while making a parachute descent. She jumped at a height of 3,000 ft. and, it seems, pulled the rip cord prematurely, the parachute becoming entangled with part of the structure of the aircraft. Unable to release herself, she swung below the machine, and died from injuries received when, as at last he was compelled to do, the pilot landed.



DUTCH SCENERY ON THE SOLENT: A "Redwing" hull which Lt. Col. Moore-Brabazon has fitted with a vertical rotor instead of sails.

Diary of Forthcoming Events

Club Secretaries and others are invited to send particulars of important fixtures for inclusion in this list:

Aug. 17-Sept. 2. Copenhagen Aero Show.
 Aug. 25. Liverpool and District Ae.C. Garden Party, Speke Aerodrome.
 Aug. 28-Sept. 16. International Touring Competition, Poland.
 Sept. 1-2. Cinque Ports Flying Club International Rally, Lympne.
 Sept. 1-9. National Soaring Competition, Sutton Bank.
 Aug. 31. Opening of Newtownards Aerodrome, Belfast.

Sept. 15. Herts and Essex "Aerofête" at Broxbourne.
 Sept. 29. Leicestershire Aero Club "At Home."
 Oct. 5. London to Cardiff Air Race and Cardiff Ae.C. Garden Party.
 Oct. 7. Aviation Golf Meeting, Royal Porthcawl Golf Club Porthcawl.
 Oct. 20. England-Australia Race for MacRobertson Prize.
 Nov. 16-Dec. 2. 14th International Aviation Exhibition, Grand Palais des Champs-Élysées Paris

COMMERCIAL AVIATION

— AIRLINES — AIRPORTS —

INAUGURATION

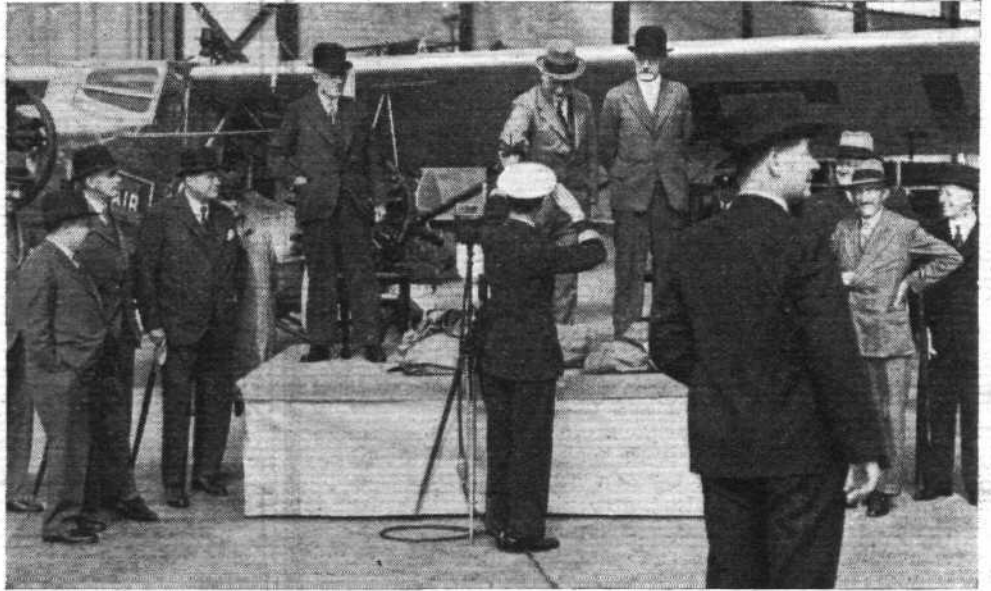
The First Day of the Inland Air Mail Service. Bad Weather Holds Up Railway Air Services' Glasgow-London Machines at Manchester

AFTER a day on which a "trial" service was run under conditions that could hardly have been bettered two Railway Air Services' D.H. 86's left Renfrew, Glasgow, last Monday, with the first inland air mails, in a torrential downpour. Visibility was worse than poor, and Northern England was the centre of a depression.

The weather, in fact, could hardly have been worse for such an important occasion, and between Aldergrove, Belfast, and Barton, Manchester, the passengers, among whom were Sir Harold Hartley and Wing Com. Measures, respectively chairman and superintendent of R.A.S., received a severe buffeting in the gale that was blowing. While passing over the Isle of Man, in fact, the machine met a down current so violent that Sir Harold's head was pushed through the emergency exit fabric, and the other passengers were similarly ill-treated. Such violent "bumps" are rarely met in this country. At Barton, with a wind speed reaching, it was reported, the incredible velocity of eighty m.p.h., the service was abandoned, and the mails sent on by rail.

There the two machines remained, while those who were to have received the mail at Croydon passed on to a late lunch. Little hope was held out that the journey would be continued under the exceptional weather conditions. Bad enough—but as both the new D.H.86's were at Manchester, how were the mails for the North to be taken from Croydon at 3.10 p.m. in the afternoon?

At three o'clock an Imperial Airways Westland "Wessex" was wheeled forth and labelled, a dais erected for the inauguration ceremony, and various other pinnacles arranged for the Press photographers, who, with the newsreel people, thereafter



Sir Frederic Williamson, C.B., hands the mails to Capt. W. Armstrong. On his left can be seen Captain Harris and on his right Mr. F. Bertram. Beside the platform to the right is Group Capt. Primrose, one of the Air Mail Advisors.

took charge of the situation and arranged the ceremony.

Sir Frederic Williamson, C.B., Director of Postal Services, handed the mails to Capt. J. W. Harris, R.N.R., Chief Marine Superintendent of the L.M.S., and spoke a few appropriate words into the microphone. Sir Frederic then, supported by Mr. F. Bertram, Deputy Director of Civil Aviation, handed the bag to Capt. W. Armstrong, of Imperial Airways, who was to fly the "Wessex" north into the gale.

A few minutes after four o'clock the Armstrong Siddeley "Genets" were wound into life.

Japan to India

Negotiations for a weekly air service between Japan and India, it is understood, have reached an advanced stage.

A British air service at Nanking has for some time been attempting to persuade a Chinese company to extend its service between Shanghai and Canton to Hong-Kong, and Japanese business men are interested in the extension.

Faster Air France

Early next year it is possible that Air France will have passenger machines in service with a cruising speed of 190 m.p.h. Two new Dewoitine and two Marcel Bloch three-engined machines have been ordered.

After September 1 three-engined Wibault-Penhoet machines of the "Golden Clipper" class will be used on the Paris-Marseilles line, and three-engined Fokker machines on the Marseilles-Cannes route.

The Damascus-Baghdad service has become increasingly popular since the fare was reduced to £12. Special motor services connect with Beyrouth and Haifa, and between Aleppo and Stamboul on this bi-weekly route.

Until September 14 the Paris-Bordeaux-Biarritz service, operated with Gipsy Farmans, will be run daily.

Misir Airwork and the MacRobertson

Misir Airwork propose to run a special service from Cairo to Baghdad during the period of the England-Australia race, in order to give people an opportunity of witnessing the epic from an important control point. Enquiries are invited.

Four-engined Savoia-Marchetti

A four-engined land plane with a span of nearly 100ft. is under construction by the Società Idrovolanti Alta Italia. The monoplane wing is of wood and the fuselage is of welded steel tubes. The maximum speed at 3,280ft. is said to be 199 m.p.h., and the cruising speed at the same altitude 174 m.p.h.

The Ringway Business

It appears that there is trouble brewing over Manchester's new airport site. Representatives of all local authorities have pledged themselves to fight to the last against the Ringway proposal. They claim that the cost will be a great deal more than that originally estimated (£179,000), and that the estimated cost of improvements at Barton was "all nonsense." Perhaps—but there are always wheels within wheels.

CROYDON

*Commander Deacon : Air Travel Converts : The Police Autogiro at Croydon :
A "Duty Tour" for Traffic Officers : Those Flashing Beacons*

A MISUNDERSTANDING in last week's notes requires clearing up. Capt. Crundall, of Air Taxis, Ltd., was stated to have taken two children to Bridlington in a machine on a newspaper job. Actually there were two machines out and the children were carried by Mr. Charles Allen, who happened, also, to be flying north.

I understand that Comm. Deacon, of Lympe, is retiring owing to ill-health, and I was sorry to learn he is at the moment suffering from nervous breakdown. Comm. Deacon has been with us at Croydon and Lympe since the very first days of civil aviation, and all the old hands have experienced his kindness and helpful assistance. Latterly, air route pilots have put in at Lympe rather less frequently, but the good organisation of that station in times of emergency has become a tradition. We shall all miss Comm. Deacon, who was ever "a very present help in times of trouble." Capt. Markam has already gone to Lympe, and it is believed that he will be permanently appointed.

how many people fear their first flight and, after it, cannot be persuaded to travel in any other way.

Americans certainly know how to use air services to advantage. A party of twenty on a cruise, with little time to spare, left the boat at Rotterdam, flew by K.L.M. to Paris, linked up there with Imperial Airways for London, spent Thursday evening and Friday in London and flew back to Paris and Rotterdam on Saturday. Out of the party there were nineteen women. Six Members of Parliament left for Uganda by last week's African service of Imperial Airways, Ltd.

The police Autogiro dropped in suddenly on us, piloted by Flt. Lt. Nash, and landed on a pre-arranged tarmac driven into the tarmac—or so it seemed. There were those who regarded this sudden descent of the police from the blue with a thoughtful and saddened air. Railway Air Services, Ltd., have been busy with preparations for their new service to the north. One four-engined D.H.86 has been seen quite a lot at Croydon during the past week, piloted by Mr. Locke and others.

H.R.H. Prince George travelled to Paris by Imperial Airways, Ltd., incognito, one day last week, and the American Ambassador came in by K.L.M. from Holland. Two other names on an aeroplane's papers aroused interest, until it was discovered they were imported rose eyes for grafting!

Capt. Russell of the Control Tower staff starts a "duty tour" from Croydon to Amsterdam by D.L.H. and on to Copenhagen by K.L.M./A.B.A. Scandinavian Air Express. These flights are intended to familiarise the traffic officers with different air route conditions and are of great value to both the traffic companies and the Air Ministry.

A male film star arrived from Paris by Imperial Airways, Ltd. one day last week. Usually, I do not chronicle the movements of film stars, but this one was interesting—a chimpanzee. It is named Julot, and it threw its arms round Capt. Dismore's neck and thanked him for the flight—made in perfect comfort in the freight compartment.

It has been announced that the English section of the London Paris air route has at last been lit by flashing beacons. A "lighting expert" came to Croydon and boasted to a very senior pilot that this had been done. "Oh yes, why?" replied the pilot. We are all wondering. Some years ago, when it was mooted, the idea was good; day flying was mostly on landmarks then and illuminated ones for night work seemed logical. To-day, high flying is safe flying, and if you are above the clouds you do not see flickering fairy lamps on the ground. In fine weather they are not wanted. Modern German night pilots have little use for lighted routes. No doubt these will prove useful, but they tempt people to low flying at night, and this is wrong in principle.

Money could be more usefully spent in better airport lighting. Not one of these lights, on or adjacent to the airport, has been placed where it would be of use. But for the boast of the expert to the air line pilot, I should have supposed these lights were meant for the R.A.F. or for sundry private owners without wireless, who were benighted, particularly as the authorities appear to have illuminated the wrong route. Few air line pilots use the Edenbridge, Tunbridge Wells and Ashford route now, and fewer will do so in future. It is rather like putting street lights along the abandoned Pilgrims Way. I hear infuriated householders have already extinguished one or more of these "blinking lighthouses" with rocks, because they make night "hideous." A. VIATOR.



COMFORT AND COMPOSURE AT 110 M.P.H. : Not the interior of a railway carriage, but of a modern air liner—Horatius, of Imperial Airways. There are two separate armchair seats on each side of the tables, on which meals are served. (Flight Photo.)

Several firm converts to air travel have been made during the past week. Sir Reginald and Lady St. Johnstone travelled to Rotterdam by K.L.M. It was their first trip and they were delighted. Sir Reginald is Governor of the Leeward Islands. Then there was Miss Sophie Tucker who, though a grandmother, had never flown before. She was due at Cannes at a ceremony connected with disabled soldiers and could not keep the appointment save by flying to Paris. Capt. Armstrong, her pilot, said a few reassuring words and the smooth flight of *Hengist* did the rest. It is really curious

An Atlantic Aircraft Base

The Lufthansa will put into service, either at the end of this month or at the beginning of September, a new floating station for the Transoceanic air mail service between Germany and South America.

The first floating station, the S.S. *Westfalen*, was formerly one of Lloyd's steamships. This second station is a 5,000 ton motor boat, the *Schwabenland*, and it should be completed now. Good use has been made of the experience gained with the *Westfalen*, and in the new vessel the catapult equipment has been fitted at the rear of the vessel, and is made to swing. Also the crane which hoists the flying boats on board is of the universal type. The level of the catapult equipment has been lowered by about five feet, so that the unduly heavy deck-load is lessened.

A New Japanese Air Port

A new international airport, costing a million pounds, is to be established by the Japanese Air Transportation Co., the only civil aviation company in Japan, between Osaka and Kobe, and will have facilities for both land and sea planes.

In Australia

West Australian Airways, though losing the contract for the Perth-Katherine air mail, are still operating the service, and nothing has yet been done by the MacRobertson-Miller Aviation since they obtained the contract. Mr. James Woods has been appointed manager of the new company, which will use D.H. 'Dragons.' Mr. Woods was previously a pilot of West Australian Airways.

HESTON

Varied Charters : After Forty Years : In Egypt : An Instructor Instructed : Towards Newtownards

CHARTER work was carried out last week by Wrightson and Pearse, who took a D.H. "Dragon" up to Scotland and delivered 600 lb. of grouse, on the evening of the first day's shooting, to the gourmets of the West End, and by Maj. Digby, of Birkett Air Service, who had an exciting chase on the roth from Lowestoft and Norwich to Yarmouth in pursuit of Stockwell, the "wanted man" in the cinema murder case. Major Digby was, as usual, able to bring back pictures for the Press in good time.

As long ago as 1893 Mr. Douglas Fawcett astonished and perplexed the critics by writing an air novel. Though he modestly disclaims all suggestions of second sight, Mr. Fawcett did, in fact, anticipate the most modern fighting aircraft even down to the turret on its nose, and described an aerial attack on London by all the means resorted to during the Great War. Even the *fin de siècle* Victorians, who professed to be surprised at nothing, had to tell him that *Hartmann the Anarchist* was fanciful. But Mr. Fawcett was undeterred. He has always seen a future for flying; and so at the age of 68 he came to Heston from his home in Switzerland to learn to fly. His first solo took place with great success on Tuesday; and now Mr. Fawcett is making plans for flights as a pilot-photographer over the High Alps. He has already flown, with a friend as pilot, 16,300 ft. over Mt. Blanc, and on that occasion fell 650 ft. in a pocket caused by the hot foehn wind, which at unexpected moments sweeps northwards over the Alps and is a peril to airmen. On other flights he has been able to take excellent mountain photographs of peaks, with which, as a mountaineer, he has long been familiar.

Misr Airwork, S.A.E. (Airwork's associated company in Egypt) is giving flights for summer residents at Ras el Bar, and it is proposed to continue this activity the whole of the summer season. Another news item of interest is that H.E. Sir Miles Lampson, High Commissioner for Egypt and the Sudan, has taken up flying, and is now receiving dual instruction from Misr Airwork.

Mr. Filson Young, who has for the past few weeks grown eloquent to B.B.C. listeners on the adventure of learning to fly, last week "had his own back" on his flying instructor! He confronted Capt. Baker with a microphone and stood over him, backed by all the authority of the B.B.C. No fear of stalling, however, with a Heston pilot! Capt. Baker gave an illuminating talk on flying from the instructor's viewpoint, and commented on Mr. Filson Young's difficulties and good points with sympathy and understanding, showing that he knew all along what his pupil was thinking and feeling.

The preliminary scouting expedition to Ireland having been carried out with great success, the first division set out to Newtownards last week. Its vanguard left on Wednesday last week in the persons of Mr. Bryant, manager and chief instructor of the new aerodrome, flying the Avro "Cadet" which he will use at the flying school, and of Miss M. de Bunsen, Press secretary at Heston, motoring herself and Mrs. Bryant. They were followed later by Mr. Roderick Denman, a director of Airwork, in his Stinson. Mr. Denman will supervise all the preparations for the opening ceremony, to be performed by the Governor of Northern Ireland, which takes place on August 31 at 2.30 p.m.

The Last Link

Since arrangements have been made with the Italian Government, allowing Imperial Airways to fly between Marseilles, Naples, and Brindisi, only the section between Le Bourget and Marseilles remains to complete the air link with Africa and the East.

Apparently difficulties still remain, and Lt.-Col. F. C. Sheldrake returned to London after discussions last week in order to make a report. After the Government had, on principle, turned down a proposal to prohibit the carriage of French passengers on Imperials and of British passengers by

Air France, it was suggested, on the French side, that passenger receipt pools, in proportions of 60 per cent. and 40 per cent., between London and Paris, and between Paris and Marseilles, should be established between the two companies. It was pointed out by the French representatives that there was a similar arrangement for the Netherlands company over the East India route, and they suggested that, in return and agreeing that 80 per cent. of the Paris-Marseilles traffic is British, unrestricted passage might be allowed across Indo-China for an Imperial extension to Hong Kong.

In the meantime the unfortunate passengers spend two nights and a day on the train between Paris and Brindisi.



CRUISING AT 145 M.P.H.: One of the D.H.86's which are being used on Railway Air Services' Glasgow run, photographed near Hatfield. The "Diana" class is probably the fastest four-engined commercial machine in the world.

Provincial Airways Developments

Two D.H. "Dragons," each with two-way wireless, are now in service on Provincial Airways' Plymouth route, which is operated twice daily, leaving Croydon Airport at 10 a.m.

Mr. Jack Addison tells us that his company proposes to run through the winter according to schedule, whenever safety permits, and hopes that it will obtain an air mail contract in due course. When and if Southampton and Plymouth become wireless-equipped, it will be possible to run the service in all but conditions of no visibility.

This South West coast service makes a feature of personal attention to the passengers. There are two lists of fares, one of which includes a "door to door" transport service for the passenger, and each person is allowed 30 lb. of baggage free, with an excess charge of 3d. a pound over this weight. Passengers may be put down or picked up at Southampton, Ports-

mouth, Bournemouth, Dorchester, Weymouth, Haldon, Plymouth, Newquay or Hayle, though the service is scheduled normally to stop only at Southampton, Haldon and Plymouth. Machines are, of course, available at any time for special charter work.

A "Perseus Scylla"

For some time it has been rumoured that an Imperial Airways Short "Scylla" might be fitted with Bristol "Perseus" sleeve-valve radials, and it will be interesting, therefore, to give the performance figures with these engines, which develop 660 h.p. at ground level. The maximum speed is increased from 130 m.p.h. to 134 m.p.h., and the cruising speed from 105 m.p.h. to 113 m.p.h. The fuel consumption is slightly lower, the rate of climb increased from 600 to 800 ft. per min., and the service ceiling increased from 14,000 to 15,000 ft.

Private Flying (Continued from page 869.)

FROM THE CLUBS

CARDIFF

Mr. C. Bowen-Davies, who is seventeen years of age, went solo after only four days' instruction. He joined the Cardiff Aeroplane Club on Sunday, August 12, and made his solo flight on Thursday, August 16, after five hours and twenty minutes' dual instruction.

WALSALL

The membership of the Walsall Aero Club has steadily grown, and the hundred mark has now been reached. Mr. G. Proffitt made his first solo early in the week, and is the first member under instruction to accomplish this. The average flying time for July has been 21 hours a week.

LIVERPOOL AND DISTRICT

A garden party will be held at Speke Airport, Liverpool, on Saturday, August 25, to inaugurate the opening of the new club house of the Liverpool and District Aero Club. The programme, which includes tea, aerobatics, and a demonstration by A. V. Roe & Co., Ltd., of the Autogiro, will extend from 3 to 6 p.m.

NORFOLK AND NORWICH

On Saturday, September 22, the club will be holding its annual garden party, and the Women's Engineering Society, who are holding a conference in Norwich during that week-end, have been invited. There will be a supper-dance in the clubhouse during the evening. Mrs. J. A. Mollison has promised to attend.

BROOKLANDS

New members at the Brooklands Flying Club include Mr. Burge, Capt. C. H. Walter, and Mrs. Walker Sinclair. First solos were flown by Messrs. Henderson, Pepys and Muir, and "A" licence tests have been completed by Messrs. Henderson and Muir. Altogether instructional flying hours last week amounted to 104 hours. Several cross-country formation flights, with four machines, were made.

The International meeting at Lympne is responsible for the erection of a pylon at Brooklands, and private owners who have entered for the races are practising turns in the most professional manner.

CINQUE PORTS

Among the week's new members, Mr. Provost is a Belgian subject and a war pilot, and Mr. Harben was in the R.F.C. and had not flown since 1919. He went solo after three hours dual, and has since informed us that his previous first solo was made on a warped wing Caudron, which, incidentally, caught fire on his circuit!

Entries for the Cinque Ports Wakefield Cup and Folke-

stone Air Trophy are coming in well, and include Flt. Lt. Stainforth (Airspeed "Courier"), Mr. C. Powis ("Hawk Major"), Mr. Gardner (Avro "Cadet"), Sir Charles Rose (Gipsy 6 "Hawk"), L. Lipton, Miss Giles, Mrs. Battye, and Mrs. Patterson. Two club machines have been entered.

Apart from the races, the display will include demonstrations of the Monospar by Flt. Lt. Schofield, of the Klemm "Eagle," "Hawk Major," Wolseley "Tom-Tit," and, it is hoped, by Flt. Lt. Bulman on a Hawker "Hart."

LONDON GLIDING

Few clubs, whether flying or gliding, have established themselves without outside help upon such sound foundations as the London Gliding Club. A visit will show the surprising work that can be accomplished by co-operative club effort. Hangars, winches, launching apparatus, and hauling pulleys, to say nothing of an almost palatial club house, have all been designed and erected by the members themselves. The club house, in particular, is worthy of inspection by any club which has aspirations in the same line. Naturally others are not likely to obtain anyone quite so enthusiastically efficient as Mrs. Turvey to looking after their catering, but Dunstable will at least show them an ideal at which they can aim.

Gliding—or, at least, soaring—is a fascinating study about which it is impossible to know everything. There are, however, several pilots at Dunstable who habitually stay up for hours at a time, when others can only glide from the top of the hill. Mr. Wills, Mr. Buxton, and Mr. Collins, to mention but three, have shown that the entire monopoly of soaring knowledge no longer remains with Germany. It is to be hoped that the Government subsidy, forecast in *Flight* of June 14, 1934, will result in the training of more pilots of the same kind.

During July members under instruction have completed the qualifying flights for no fewer than twenty Royal Aero Club Gliding Certificates. On July 14 Mr. Wills made a creditable duration flight of 5½ hours in his Scud. This flight, coupled with his previous flight of 57½ miles to Latchington, near Burnham-on-Crouch, during which an altitude of 5,400 feet was recorded, entitles him to the highest award of merit in gliding, the Silver C. This certificate is issued internationally, and it has only been awarded to twenty-six persons.

An interesting flight was made by Mr. Collins on July 22, when he was launched by a motor winch from the bottom of the hill, and attained an altitude of 4,700 feet.

Eighteen new members joined the club last month, and both a new primary training machine and a new sailplane are being added to the club fleet. A small party of members are at present attending the National Gliding Competitions at the Wasserkuppe.

The Beechcraft in England

We hear from Mrs. Mollison that she has secured the agency in the British Isles for the Beechcraft high-speed cabin machine. There are three models of this machine, which is manufactured by the Beech Aircraft Co., of Wichita, Kansas, U.S.A., and one, fitted with a 420 h.p. Wright, was described in *Flight* of May 17 this year.

Mrs. Mollison is obtaining the smallest model, for demonstration, in a few months' time, and this will be fitted with a 285 h.p. Wright "Whirlwind" engine, giving a top speed of approximately 190 m.p.h.

The Viceroy's Cup

As we stated in our issue of July 19, the handicap air race for the Viceroy's Challenge Trophy will be held on December 15 and 16, and the course will be from Calcutta to Cawnpore and from Cawnpore to Bombay, with two checking points. The race is open to all machines under 400 h.p. registered in the British Empire, no dual control must be fitted, and no allowance will be made for wind in the handicap—each pilot being left to discover the best height at which to fly. In addition to the Trophy there will be several other trophies, cups and cash prizes amounting to £500 in value.

THE COPENHAGEN AERO SHOW

Military Types and Equipment Predominate

FROM A DANISH CORRESPONDENT

AS foreshadowed in *Flight* last week, the Second International Aero Show to be held in Copenhagen bears strong evidence of British influence. Not only is the S.B.A.C. stand the largest after the central Danish stands, on which are exhibited the Army and Navy Air Force types, but among the equipment and material British products appear to be preferred by the Danish Services. And on the Danish Navy Air Service stand are shown exclusively British types with British engines, so that, generally speaking, this country has good reason to be content with its aeronautical relationship with Denmark.

The Copenhagen Aero Show was formally opened last Friday by the Minister of Transport in the presence of H.R.H. Prince Axel of Denmark and a distinguished gathering, including Danish and foreign Ministers and attachés, representatives of the Danish Army and Navy, and of the Danish and foreign firms which exhibit at the Show. The Exhibition is receiving excellent support from the Danish Press and public, and bids fair to become a great success.

Denmark's Contribution

In last week's issue of *Flight* the British exhibits were dealt with at some length, and it will therefore suffice if it is pointed out here that the British stands attract a great deal of attention and the British exhibits come in for much appreciative comment by discriminating visitors to the Show. The sincerest form of appreciation is that to be found on the stand of the Danish Navy Air Service.

Two full-scale machines are shown, one partly stripped to show the construction. One is of a Hawker "Dantorp," with Siddeley "Leopard" engine, and the other is a Hawker "Nimrod," fitted with Rolls-Royce "Kestrel" engine. Both machines have been built at Orlogsværftet (the Naval dockyard) in Copenhagen, where also the Hawker "Dankok" single-seater fighter was built.

The "Dantorp," as readers of *Flight* may recollect, is the Hawker "Horsley," fitted with the Siddeley "Leopard" engine. It is used by the Danish Navy Air Service as a torpedoplane, and is exhibited with a torpedo weighing three-quarters of a ton, and with eight 50 kg. bombs. It should be pointed out that these are alternative armaments and are not in service carried simultaneously.

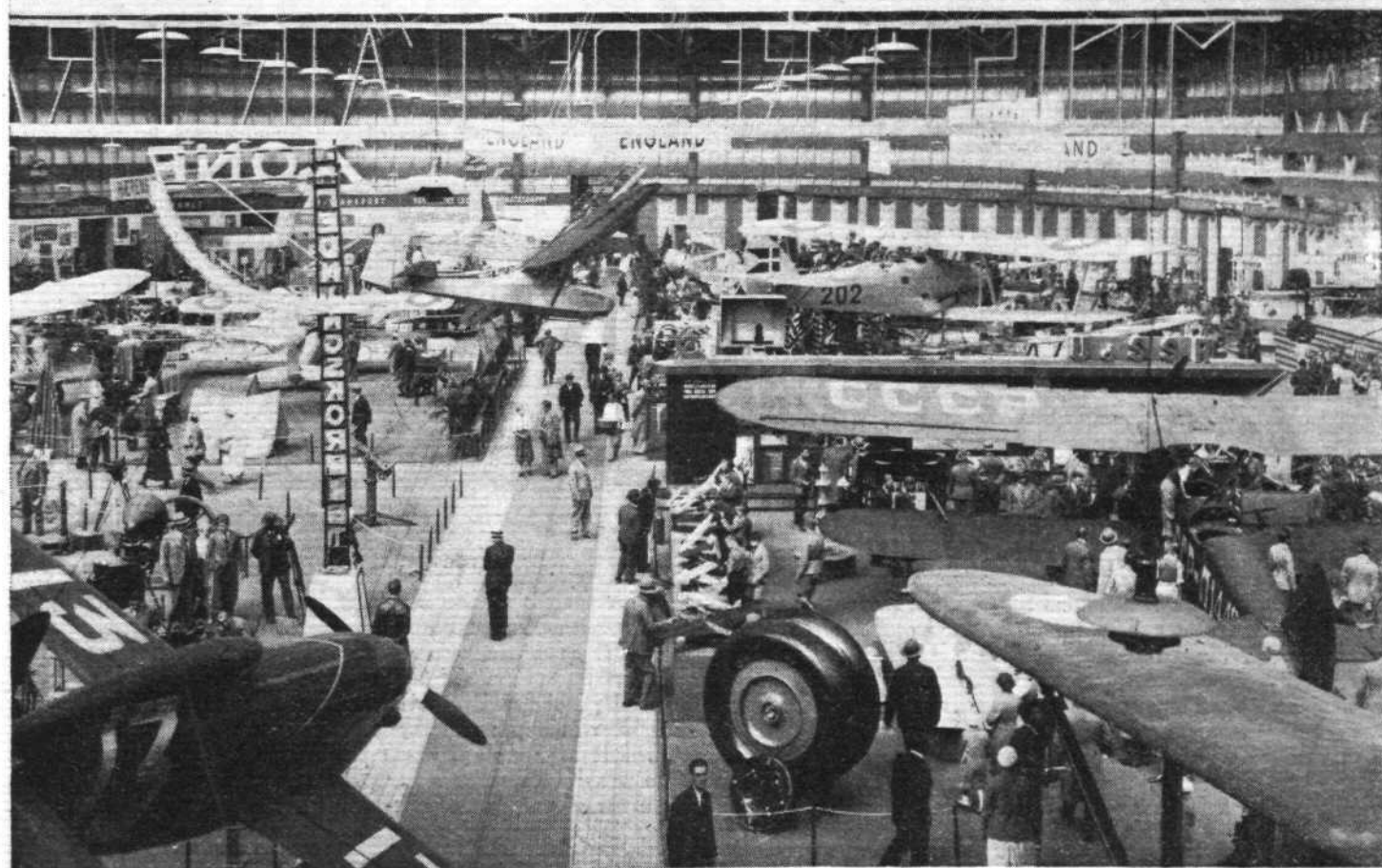
Introduced to replace the "Dankok," of which twelve were built under licence by the Naval dockyard, the Hawker "Nimrod" will already be familiar to readers of *Flight*. The machine is shown in skeleton so that not only the constructional features but the service equipment can be readily inspected. Of other exhibits on this stand may be mentioned a Siddeley "Jaguar," part-sectioned to show how the internal bits of mechanism work. In the cinema daily shows are given at 4 p.m. and 8 p.m. which illustrate the work of the Navy Air Service. Of particular interest are the films showing formation flying, torpedo dropping, and the laying of smoke screens.

On the stand of the Danish Army Air Service are exhibited two full-size aeroplanes: a Fokker C.V.e built under licence by the Army aircraft workshops, and a de Havill-

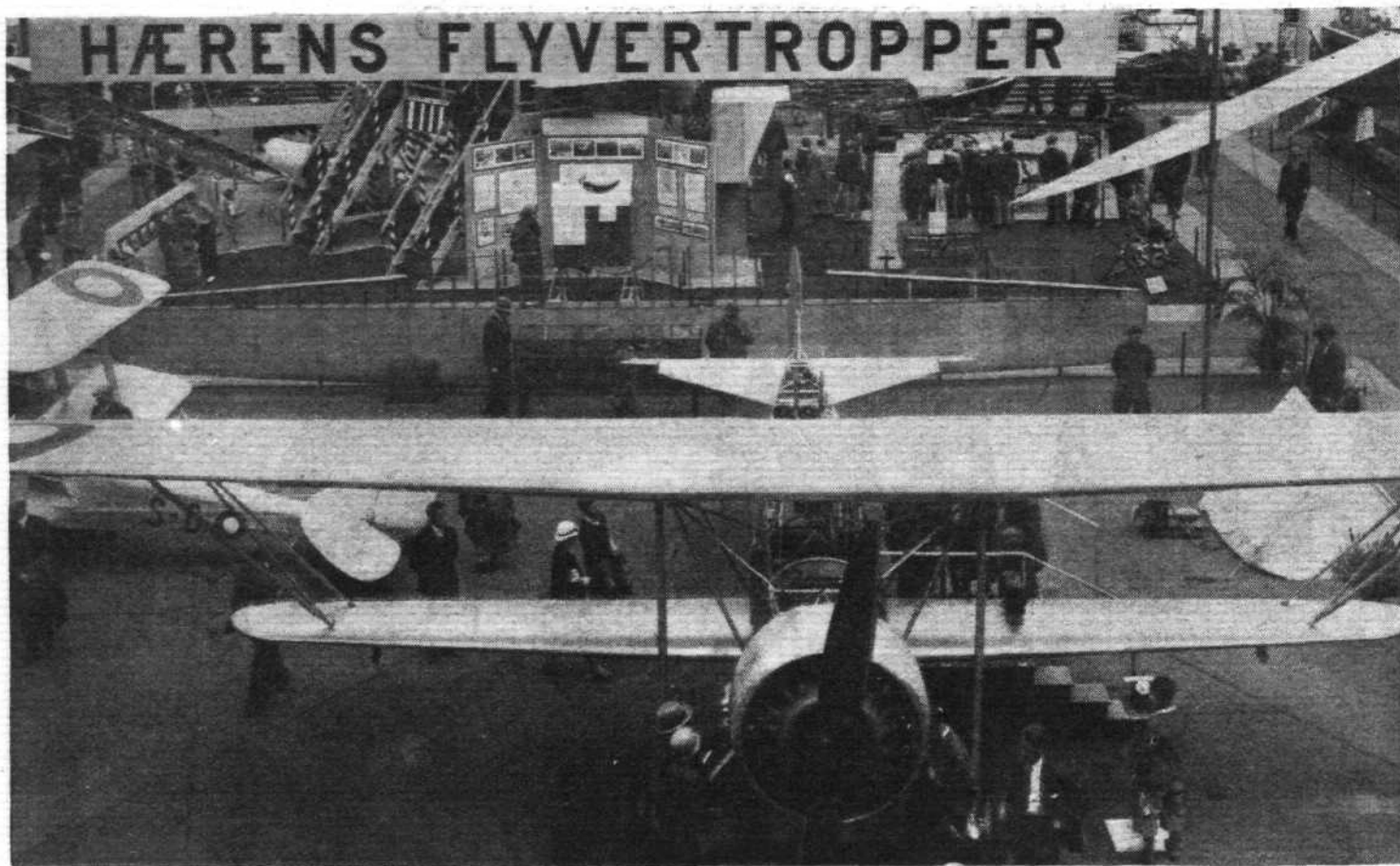


THE DANISH NAVAL AIR SERVICE STAND: In front is the Hawker "Nimrod" (Rolls-Royce "Kestrel") and behind that the "Dantorp" (Siddeley "Leopard.")

AT THE COPENHAGEN AERO SHOW



ON THE S.B.A.C. STAND: Bristol and Rolls-Royce engines in the foreground, with the de Havilland "Moth Major" behind them. Farther back can be seen the Armstrong-Whitworth "Scimitar," and on the right the Avro-built Autogiro. The lower photograph is a general view from the opposite end of the Forum hall, with the Caudron monoplane on the left, the Russian machine on the right, and the Danish-built Hawker "Dantorp" beyond. Suspended from the roof is the Danish glider.



THE DANISH ARMY AIR FORCE STAND: The machine in the foreground is a Danish Fokker with Bristol "Pegasus" engine. Beyond it, on the left, can just be seen the de Havilland "Tiger Moth."

land "Tiger Moth." The Fokker is fitted with a Bristol "Pegasus" engine. Among other exhibits on this stand may be mentioned a de Havilland "Gipsy Major" engine, a Bristol "Pegasus," and a Marconi wireless set, as used in the Danish reconnaissance aeroplanes.

A close inspection of the machines built under licence from abroad reveals the fact that Danish workmanship is now of a very high order, which will bear comparison with the workmanship found in any of the large aircraft-producing countries.

The French Exhibits

Compared with the Danish and British exhibits the French section of the Copenhagen Show is not impressive. Three full-size aircraft are shown: an F.B.A. flying boat, type 294, a Caudron "Rafale" with Renault "Bengali" engine, and a Breguet all-metal military two-seater with Gnome K.9 engine. The types are already well known, and should need no introduction to readers of *Flight*.

French aero engine firms are represented by Gnome-Rhone, Renault, and Lorraine, which firms exhibit water-cooled and air-cooled types. A number of models illustrate products of such constructors as Dewoitine, Liore and Olivier, Breguet, Couzinet, Farman, Bleriot, Latecoere and Wibault.

Soviet Russia

Those visitors who went to Copenhagen expecting to find in the Forum one or more of the large commercial Russian aeroplanes which have been reported to be marvels of engineering skill were doomed to disappointment. Again it was probably lack of space which prevented these large machines from being exhibited, and the famous ANT-20 (*Maxim Gorki*) and ANT-14 (*Pravda*) are represented by models only.

The only full-size aeroplane on the Russian stand is the actual machine in which the pilot Molokov rescued thirty-

nine members of the Chelyuskin Expedition from the ice floes in the Arctic Ocean. As the machine is a two-seater, Molokov must have made a large number of flights. A model of Professor Schmidt's camp enables visitors to the Forum to form an idea of the meritorious nature of the rescue work.

Two Russian engines are exhibited: an 850 h.p. type M-34, and a 650 h.p. type M-48. Motor sledges are also exhibited, a type of vehicle on which Russia appears to specialise.

Czechoslovakia

A single firm represents Czechoslovakia: Walter Motors. This company exhibits a series of air-cooled aero engines ranging in power from 150 b.h.p. to 350 b.h.p. All appear to be well made and to have had a great deal of thought expended upon their design. One, the Walter Major, must be admitted to be strongly influenced by de Havilland design, resembling the "Gipsy Major" considerably.

The British Exhibits

For details of the S.B.A.C. exhibits at the Copenhagen Aero Show we would refer readers to last week's issue of *Flight*, in which was published a four-page article, illustrated by photographs, outlining the products exhibited by the twenty-eight British firms of which the S.B.A.C. section is composed. No less than eleven aircraft firms exhibit aircraft or models, while the British aero engine industry is represented by five firms. The remainder show accessories, equipment and materials.

All the present indications are that British participation will prove to have been very well worth while, and if Denmark should decide to hold a third international show, Great Britain is likely to be among the exhibitors. The question of space is a serious one, and it might be advisable to consider the possibility of holding the next show in tent hangars on the aerodrome.

THE ROYAL AIR FORCE

Service Notes and News



Air Ministry Announcements

COMBINED EXERCISES OFF YORKSHIRE

Combined exercises by the Navy, Army, and Air Force will be held from September 10 to 13 on the Holderness Peninsula, Yorkshire. The exercises will be directed by Admiral Sir William H. D. Boyle, K.C.B., Commander-in-Chief, Home Fleet; General Sir Alexander E. Wardrop, K.C.B., C.M.G., G.O.C.-in-Chief, Northern Command; and Air Vice-Marshal A. M. Longmore, C.B., D.S.O., A.O.C., Inland Area. Certain units of the Home Fleet will take part in the exercises together with the 5th Division of the Army, and certain bomber, fighter, and army co-operation squadrons of the R.A.F. No attempt is being made to solve any major problem connected with opposed landings. The principal aims of the exercises are to test the general arrangements for intercommunication between the three Services during landing operations and training in general co-operation work by the three Services. The opposition will be represented by a skeleton force, and only about 2,000 troops will actually be embarked.

KING OF AIR FIGHTERS

Maj. Mannock, V.C., D.S.O., M.C., has been described by more than one good authority as the greatest air fighter of the war. Hitherto no account of his life has been published, and it is therefore very gratifying to learn that a biography of Mannock is to be published in the autumn by Messrs. Ivor Nicholson and Watson. The author is Flt. Lt. J. I. T. Jones, D.S.O., M.C., D.F.C., M.M., now on the staff of No. 1 Air Defence Group.

AIR VICE-MARSHAL SIR ROBERT CLARK-HALL

With the retirement of AVM. Sir R. Clark-Hall, K.B.E., C.M.G., D.S.O., recently A.O.C., Coastal Area, the now small number of pre-war pilots in the Royal Air Force is further diminished. Sir Robert was a lieutenant in the Navy when he learnt to fly in August, 1911, and received the R.Ae.C. certificate No. 127. During the war he served in the R.N.A.S. in various capacities, at Dunkirk, in the Mediterranean, and in command of the carrier *Ark Royal*. The command of the Coastal Area was a fitting conclusion to a distinguished Navy-Air Force career.

AIR BASE IN THE BERMUDAS

A Royal Air Force base is being established in the Bermudas for the overhaul and repair of the machines of the Fleet Air Arm in the Western Atlantic. An advance party has been sent out to Hamilton, and the unit will be up to strength by the end of the year. Flt. Lt. T. H. Moon will be in command of the unit. He is familiar to readers of *Flight* as the engineer officer in the High Speed Flights of 1927 and 1929.

EXPLOSIVES COURSE.

Flt. Lt. C. B. Turner (R.C.A.F.) and F/O. A. R. Morton have successfully completed the explosives course held at No. 2 Stores (Ammunition Depot), Altrincham, and the latter is granted the symbol "X."

COLOUR BLINDNESS

Airmen and aircraft apprentices whose colour vision is defective will not in future be trained in the trades of fitter (armourer) or armourer. If the colour vision of a candidate for training in one of these trades has not been tested and recorded on Form 35 at the medical examination on entry, it should be tested by means of Ishihara's plates and recorded as "Normal" or "Defective," for which the respective abbreviations "N" or "D" are to be used. A certificate that the colour vision test has been passed is to be included in the recommendation for training forwarded by C.Os. to the Officer i/c Records.

No action need be taken as regards airmen and aircraft apprentices at present mustered or under training in these trades.

FLYING BOATS FOR MELBOURNE

The itinerary has now been approved for the voyage of No. 203 (Flying Boat) Squadron from Basra to Melbourne to take part in the celebrations connected with the centenary of the State of Victoria.

The three aircraft ("Rangoons") will leave on September 5 for Bahrein and Räs-al-Khaimah. Subsequent stages will be:—

September 6, Gwadar and Karachi; September 8, Salaya and Udaipur; September 9, Gwalior and Allahabad; September 10, Bhagalpur and Chittagong; September 12, Akyab; September 13, Rangoon and Mergui; September 16, Penang; September 17, Singapore; September 20, Batavia; September 22, Sourabaya; September 23, Bima; September 24, Koepang; September 26, Darwin; September 27, Melville Bay; September 28, Thursday Island; September 29, Cooktown; October 1, Bowen; October 2, Brisbane; October 5, Sydney; October 8, Melbourne.

The return journey will be made by the same route, the aircraft leaving on November 12 and arriving at Basra on December 20.

The distance to be flown in either direction is 9,363 miles, making a total of nearly 19,000 for the double journey.

PERMANENT COMMISSIONS

Stores Branch

The undermentioned warrant officers have been granted permanent commissions in the stores branch:—H. Wood, M.B.E., W. G. R. Jarman, H. E. Bethell, E. J. Bradbury, and T. J. Kinna.

TRANSFER OF OFFICERS TO THE RESERVE

The undermentioned short service and medium service officers should note that they become due on the dates stated for transfer to the reserve, or (where indicated) for relinquishment of commission, on completing their period of service on the active list:—

February-March, 1935

General Duties Branch

Flight Lieutenants.—Edward George Honeywood Russell-Stracey, Patrick Vaughan Williams (March 14); Ivor Gordon Easton Dale (March 31). *Flying Officers*.—Richard Vernon Alexander, John Boston, Hubert Malcolm Bowes-Lyon, Thomas Joseph MacInerney, John Grazebrook Mansfield (February 3); Brian Everard Lowe (February 5); Francis George Levett Bain, Leslie Thomas Godard Barber, Gerald Spencer Barrett, William John Brighty, Hector Ivo Dabinett, Maurice Henry Kelly, Charles Arthur Murray Kyrke-Smith, John Ross Palmer, Martin Pritchard Price, John Russell Watson (February 21); *Alfred Charles Desmond Webb (March 5); William Alfred Archibald Ashcroft, George Burdick, Neill Daunt, Arthur Philip Glenny, William Halmshaw, William Edward Lawley Lewis, Ralph Ian George MacDougall, Patrick Herbert Maxwell, Richard Thomas Showler Morris, William Arthur Richardson, William Arthur John Satchell, Henry Augustus Simmons, Arthur William Vincent, Reginald Geoffrey Wilde (March 14); *Donald Anderson Cameron, *Alister William Stewart Matheson (March 18).

*To relinquish commission. Not liable for R.A.F. reserve service.

LONG SERVICE AND GOOD CONDUCT MEDALS

The Long Service and Good Conduct Medal has been awarded to the undermentioned airmen:—W.O.'s Darke, C., and Hicks, W. E. S.M.2 Burley, C. J. W.O.2 Gale, F. S.M.2 Gaston H. T. W.O.2 Manuel, H. C. W.O.2 Miller, N. B. F/Sgts Billington, H. G., Bowman, F. L., Brewer, W. P., Brimicombe, E., Brown, H. J., Craddock, F. W., Dawes, P. W. J., Fowles, A. F., Godfray, E. F., Gribben, E. J., Jarrett, R., Lloyd, J., McKenzie J. L., Parnell, G. W., Stephenson, A. C., and Syrett, A. V. Sgts Ayles, W. A., Coomber, P. J., Dutton, J. F. E., Goacher, H. G., Hughes, H. T., McFadzean, D., Minter, G., Pankhurst, B. R. C., Pyne, H., Rogers, J., Speller, F. H., and Wallace, R. Cpl/A/Sgt Baker, S. P. Cpls. Britton, L., Burnett, R. J., Ennis, H., Goldsmith, G. F., Heap, H., and Lewis, B. R. E. Cpl/A/Sgt. Massarella, W. E. Cpls. Mossop, P. G., Sharpen, A. R., Small, G. R., Spicer, W. N., Stubberfield, W. H., and Warburton, R. L.A.C. Garrood, E. E.

AIRCRAFT APPRENTICES AND BOY ENTRANTS

The Air Ministry announces:—In view of the programme of expansion in the Royal Air Force, additional vacancies will occur for boys to be trained as aircraft apprentices. Approximately 500 apprentices will be required in January, 1935, for entry to the Schools of technical training at Halton, Bucks, and at Cranwell, Lincs. They will be entered partly by competitive examination and partly by "Direct Entry" (on presentation of an approved first school certificate). Entry from both sources will take place in January, 1935.

The competitive examination will be conducted at numerous local centres on November 6 next. The sons of officers, warrant officers and senior N.C.O.'s who are serving or who have served in the Royal Air Force, the Royal Naval Air Service, or the Royal Flying Corps will receive special consideration. Full information regarding the examination, the methods of entry and the apprenticeship training scheme generally can be obtained upon application to the Secretary, Air Ministry (Aircraft Apprentices Department), Gwydyr House, Whitehall, London, S.W.1. Intending applicants may also apply for information and advice to the Headmaster of their school.

Examination candidates (normally the older ones) for whom vacancies as aircraft apprentices are not available may be invited by the Air Ministry to apply for consideration under the new boy entrant scheme for training as armourers, photographers or wireless operators.

During the training period the present rate of pay for aircraft apprentices is 1s. a day for the first two years and 1s. 6d. a day thereafter until the apprentice has both attained the age of eighteen and been posted to a unit on completing his apprenticeship training. When he is posted to a unit for duty as an aircraftman the commencing rate of pay at present varies from 3s. 6d. to 5s. 6d. a day (24s. 6d. to 38s. 6d. a week).

ROYAL AIR FORCE GAZETTE

London Gazette, August 14, 1934

General Duties Branch

F/O. E. H. Bellairs is granted a permanent commission in this rank (August 15).

AVM. R. P. Mills, C.B., M.C., A.F.C., is restored to full pay from half-pay (July 30).

Flt. Lt. H. H. Martin is placed on the half-pay list, scale A, (August 8).

Flt. Lt. P. C. Fair is placed on the half-pay list, scale B, from August 9 to September 25, inclusive.

Air Marshal Sir R. H. Clark-Hall, K.B.E., C.M.G., D.S.O., is placed on the retired list (August 11).

Flt. Lt. H. G. P. Ovenden is placed on the retired list (August 15).

The undermentioned Flying Officers are transferred to the Reserve, class A:—

J. S. Hamilton (July 30).

L. E. Chiswell (August 10).

R. B. Abraham, A. C. Bailey, J. L. C. Banks, D. Barclay, R. J. Cohen, R. M. Noblston, W. J. Scott, R. L. West (August 15).

The undermentioned Flying Officers are transferred to the Reserve, class C. (August 15):—N. Kirkham, L. Watson.

The undermentioned Flying Officers relinquish their short service commissions on transfer to the Royal Australian Air Force Reserve (August 12):—G. S. Coleman, H. O. Woodhouse.

The short service commission of Pilot Officer on probation H. W. A. Oloff de Wet is terminated on cessation of duty (August 8).

Stores Branch

Flt. Lt. Henry Tom Hamilton Copeland is placed on the retired list (August 3).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch.

Wing Commander.—G. G. Dawson, to Home Aircraft Depot, Henlow. For Engineer duties with the Officers' Engineering Course vice W/Cdr. R. G. Parry, D.S.O., 9.8.34.

Squadron Leaders.—C. R. Carr, D.F.C., A.F.C., to Royal Air Force Base, Gosport. For flying duties vice W/Cdr. L. C. Keeble, 8.8.34. P. E. Maitland, A.F.C., to No. 207 (B) Squadron, Bircham Newton, 9.8.34. To command vice W/Cdr. G. G. Dawson.

Flight Lieutenants.—W. L. Bateman, to R.A.F. Depot, Uxbridge, 4.8.34. E. L. Mole, to No. 1 School of Technical Training (Apprentices), Halton, 8.8.34. J. N. T. Stephenson, to Aeroplane and Armament Experimental Establishment, Martlesham Heath, 8.8.34. A. M. Stevens, to No. 1 Air Defence Group Headquarters, London, W.C.1, 8.8.34. L. Dalton-Morris, to Marine Aircraft Experimental Establishment, Felixstowe, 8.8.34. M. Lowe, to Royal Air Force College, Cranwell, 8.8.34.

Flying Officers.—H. B. Collins, to Station Headquarters, Andover, 8.8.34. R. Harston, to No. 1 School of Technical Training (Apprentices), Halton, 8.8.34. G. J. C. Paul, to School of Naval Co-operation, Lee-on-the-Solent, 8.8.34. G. Silyn-Roberts, to School of Tech-

EXAMINATIONS FOR GROUND ENGINEERS' LICENCES

Examination Boards will sit for the purpose of examining applicants for ground engineers' licences at the following places and times:—

(a) London, weekly, on each Tuesday in September, October, November and December, 1934 (December 25 excepted).

(b) Croydon, on the second Friday in September, October, November and December, 1934.

(c) Manchester, on the first Friday in September and December, 1934.

(d) Bristol, on the first Friday in October, 1934.

(e) Glasgow, on the first Thursday in November, 1934.

Applications for licences should be made on C.A. Form 2B, which is obtainable on request, and should be addressed to The Secretary, Air Ministry (C.A.2), Adastra House, Kingsway, London, W.C.2. Applications for extensions to existing licences will also be dealt with at these boards, and such applications should be made on C.A. Form 2D to the above address. When forwarding the application, the applicant should indicate the provincial centre which he wishes to attend for examination, if he is unable to take the examination in London.

Application for examination at the centres named at (c), (d) and (e) above can only be accepted provided that the application, together with the appropriate fees, is received *twenty-eight days* before the dates specified, and provided also that the total number of applications received is within the capacity of the board. Applicants whose applications are not accepted owing to these provisions will be given the opportunity of early examination in London, or, alternatively, of being placed on a waiting list for the next board to be held in the place in question.

Cancellation. Notices to Aircraft Owners and Ground Engineers Nos. 15 and 18 of the year 1934 are hereby cancelled.

Medical Branch

Flt. Lt. (Hon. Squadron Leader) Charles Abercrombie Eric Innes Brownlee, M.B., Ch.B., relinquishes his temporary commission on completion of service and is permitted to retain the honorary rank of Squadron Leader (August 9).

Chaplains Branch

The undermentioned Chaplains are promoted to the relative rank of Group Captain (August 6):—The Rev. Maurice Henry Edwards, O.B.E., B.A.; the Rev. Claude Albert Bloomfield Allen, M.A.

ROYAL AIR FORCE RESERVE

Reserve of Air Force Officers

General Duties Branch

The undermentioned Flying Officers are transferred from class A to class C:—R. T. Shepherd (July 4), E. D. Trask (August 7), S. C. Shand (August 12), A. J. Black (August 14).

The undermentioned Flying Officers relinquish their commissions on completion of service:—W. Steele, D.F.C. (April 13), G. P. E. Howard (August 7).

AUXILIARY AIR FORCE

General Duties Branch

No. 600 (CITY OF LONDON) (BOMBER) SQUADRON.—Flt. Lt. Peter Graham Stewart is promoted to the rank of Squadron Leader and appointed to command of the Squadron (July 1).

No. 604 (COUNTY OF MIDDLESEX) (BOMBER) SQUADRON.—Stanley Hewitt Skinner is granted a commission as Pilot Officer (July 24).

nical Training (Men), Manston, 8.8.34. B. Paddon, to No. 24 (Communications) Squadron, Hendon, 8.8.34.

The following Flying Officers are all posted to Home Aircraft Depot, Henlow, with effect from 8.8.34:—R. G. Bowditch, B. A. Casey, R. T. Cazalet, T. N. Coslett, J. M. Freeman, R. B. Harrison, A. L. Holland, W. H. Husbands, C. E. Littler, J. J. Murphy, W. S. Reed, C. G. Skinner, C. S. Smith, N. C. Walker, K. R. Warton.

Pilot Officer.—P. C. Lawrence, to No. 57 (B) Squadron, Upper Heyford, 4.8.34.

Stores Branch

Squadron Leader.—A. Garrity, to R.A.F. Base, Gosport. For Stores duties vice S/Ldr. A. H. Comfort, 8.8.34.

Flight Lieutenants.—J. E. Truss, M.C., to R.A.F. Base, Gosport, 8.8.34. V. B. Ranford, to Headquarters, Inland Area, Stanmore, 24.8.34. R. B. Brown, to Station Headquarters, Kenley, 27.8.34.

Flying Officers.—C. J. Nobbs, to No. 504 (County of Nottingham) (B) Squadron, Hucknall, 8.8.34. E. H. Walker, to No. 26 (Army Co-operation) Squadron, Catterick, 8.8.34.

Accountant Branch

Flight Lieutenant.—C. Lorimer, to R.A.F. Base, Calshot, 8.8.34.

Flying Officer.—R. L. M. Hall, to R.A.F. Base, Gosport, 7.8.34.

THE ENGLAND-AUSTRALIA RACE

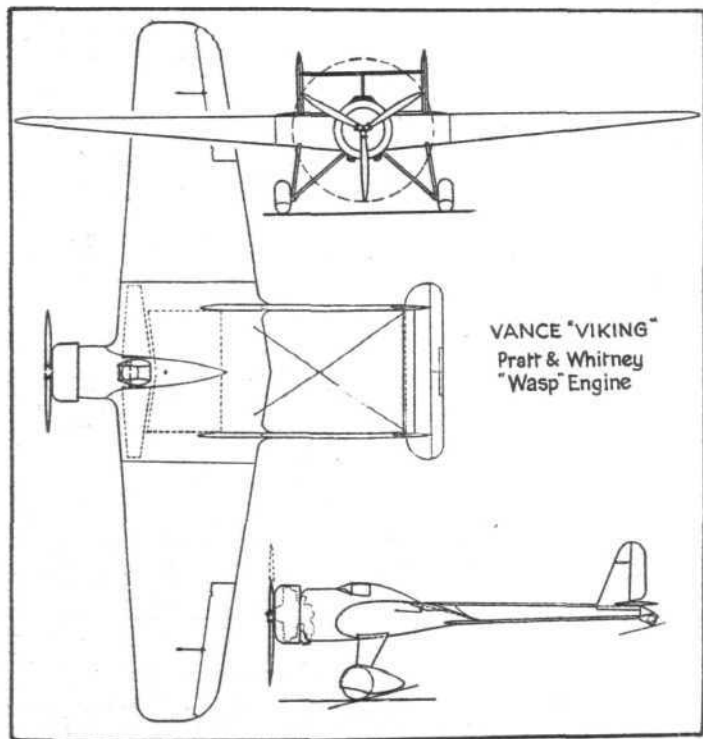
"Comets" Nearly Ready : The Vance "Viking" : More About the "Winnie Mae" : Fokker Disapproves

ONE hears that the three "Comets" which have been entered for the race are nearly completed. The first machine should be flying during the first week in September, with the others following close on its heels. While no more constructional particulars are available for publication at present, it may be said that some striking colour schemes may be expected. The pilot for the D.H. "Dragon" entered by Mr. Alan Butler has not yet been chosen.

The Lockheed "Vega" nominated by Mr. H. S. Miller, which has been at Hanworth lately, has been flown over to the K.L.M. works in Holland for modifications to be made to the "Wasp" engine. It is expected that the machine will return in about a fortnight's time. Mr. Walter T. Varney, who has entered a Lockheed "Orion," is at present in England.

The Vance "Viking"

Probably the most unorthodox machine entered for the race is the Vance "Viking," or "flying wing." This machine is at present being "groomed" in Southern California by Lt. Murray B. Dilley, who is on leave from the U.S. Army Air Corps. Lt. Dilley obtained the machine and its manufacturing rights from the estate of the late Claire Vance. It was entered in the Bendix Trophy Race in 1932, but was withdrawn owing to trouble with the petrol system. The machine, for which several startling claims were made, was never given a fair test before Vance's death.



An American "Flying Wing."

The appearance of the aircraft may be seen in the accompanying illustrations. Fuel and cargo is carried within the wing itself. Outriggers, or booms, are bolted to the rear main spar of the centre section and carry the tail surfaces. Two tail planes are fitted, the lower being fixed and carrying the elevator, and the upper being adjustable from the pilot's cockpit. A chrome molybdenum tubing structure covered with sheet duralumin is used for the centre section, and the outer portions of the wings use wooden box type spars, the covering being $\frac{1}{4}$ in. plywood.

According to a report in *Aero Digest*, the engine originally fitted was a supercharged Pratt and Whitney "Wasp" with a blower ratio of 12:1 and a gear ratio of 6:1. At 2,200 r.p.m.

the maximum power is 660 h.p. A Hamilton Standard variable pitch airscrew is employed. Originally designed as a high-speed, high-altitude freight carrier, the machine is a single-seater. At present the petrol system connecting the fourteen wing tanks, capable of carrying about 1,000 gallons of fuel, is being checked, and all connections replaced. An automatic pilot is being installed. The theoretical ceiling is said to be 35,000ft., and the cruising speed at sea level 160 m.p.h. This latter figure will increase with altitude.

Lt. Dilley intends to undertake a "round" non-stop flight between Los Angeles and New York, and to follow this up with an attempt on the long-distance record, and the solo endurance record.

Keith Rider's Entry

It is reported in *Western Flying* that Keith Rider is working at Santa Monica on his MacRobertson entry, which will have a metal fuselage embodying the Douglas type of construction and cantilever plywood-covered wings. A retractable undercarriage and Pratt and Whitney "Wasp Junior" engine will be fitted.

More "Winnie Mae" Details

Mr. Carl Squier, vice-president and sales manager of the Lockheed Aircraft Co., in writing of Wiley Post's *Winnie Mae* states that Post expects his "Wasp" engine to develop its full rated 450 h.p. up to an estimated altitude of 30,000ft. As the air resistance at this height is but a fraction of that at sea level, Post expects a top speed of at least 275 m.p.h. at heights of more than 25,000ft., and looks forward to satisfactory cruising performance at between 30,000 and 38,000ft. Mechanical losses constitute an indeterminate factor, which can be revealed only by actual test.

One of the superchargers mentioned in our article last week is of conventional design with a blower gear ratio of 10:1, which compresses the air about one and a half times. The real innovation is the installation of a special Bendix-Eclipse supercharger with a 11:1 blower gear, which boosts the pressure about twice. Post should secure more than 4 lb. manifold pressure at 50,000ft., providing the mechanical losses are not too great. The first and largest of the superchargers is mounted behind cylinder No. 1 (top), and is driven by a new set of gears mounted in place of the old generator gears of the original "Wasp" C. An air intake 6 $\frac{1}{2}$ in. in diameter projects through the top of the N.A.C.A. cowl, and points directly forward. At the mouth of this intake is a shutter which controls the flow of air into the supercharger.

From the first supercharger air is taken through two pipes to the front of the engine and down through two coolers in front of cylinders No. 3, 4, 7, and 8. Air is carried from the coolers to the back of the engine and into the bottom of the carburettor and second supercharger. Despite the low temperatures at high altitudes, the air from the first supercharger is so heated during compression that cooling is necessary. The compression in the first supercharger raises the temperature between 60 and 100 deg., making it necessary to cool the air before it passes into the carburettor and second supercharger. If the first supercharger is not required the air is by-passed directly into the carburettor and second supercharger. Carburation and ignition systems are airtight, and will be maintained under pressure. A special Smith controllable pitch airscrew with a pitch range of 12 to 40 deg. has been installed. An airtight bakelite connection block in the helmet provides receptacles for plugging in the earphone leads from the radio, the earphones being mounted on the inside of the helmet.

Sir Charles Kingsford Smith

Apparently, when Sir Charles Kingsford Smith went to America to buy his "Altair," contingents of representatives from aircraft firms, reporters, and news-reel men awaited him on the quayside at Los Angeles. One member of this self-styled "reception committee" actually obtained permission from Washington to board Kingsford Smith's steamship with the quarantine officers. However, "Smithy" had apparently already arranged with the Lockheed Co. for the building of his machine. Actually, Kingsford Smith's "Altair" is a

rebuilt version of a machine which once belonged to Mr. "Vic" Fleming. It was a twin to the Lindbergh's "Sirius," but was converted into an "Altair" by the fitting of a retractable undercarriage. According to a message from Australia Sir Charles proposes to fly the machine to England from Australia during September. It would seem from his itinerary that he intends to land only at the control points, so that the trip will be in the nature of a rehearsal for the race, but in the opposite direction.

The French Entries

Little information is available regarding the French machines being entered for the race, but it appears that Vicomte Jacques

de Sibour, who was to have flown the Couzinet monoplane, will not take part. M. André de Roussy de Sales cannot, apparently, get the Bernard monoplane ready in time. Both Bleriot Aeronautique and Detroyat will give no definite information regarding their participation as yet. The Caudron entry and the Wibault of Capt. Edouard Corniglion-Molinier are both still incomplete.

Fokker on the Race

Mr. Anthony Fokker declared the other day that neither the aeroplane industry nor commercial aviation has any use for races like the London-Melbourne air race. Three Fokker machines have been entered by K.L.M.

FOREIGN AIRCRAFT

EFFICIENT LITHUANIAN MONOPLANE

The Anbo IV With Bristol "Pegasus" Engine



WITH "PEGASUS" ENGINE: The Anbo IV two-seater military monoplane. This photograph was taken during a recent visit to Croydon. (Flight Photo.)

DESIGNED by Lt. Col. Gustaitis and built in the Lithuanian army workshops, the Anbo IV is a two-seater military general-purpose machine, the latest version being fitted with the Bristol "Pegasus" engine. A flight of these machines recently visited England, and one was impressed by their businesslike appearance and high performance. The initial rate of climb was noticeably good. We understand that the "Pegasus" engines were of the "L" type, which use "low-duty" superchargers and enable the engine to deliver its power at low altitudes. Fitted with the "M" or "S" series "Pegasus" the machine should make an excellent two-seater fighter. The view and field of fire for the gunner are notably good.

Three of these machines, manned by a party of Lithuanian officers headed by the Director of Military Aviation, visited this country last July.

Fitted with the Bristol "Pegasus" L2 engine the maximum speed at sea level is 171 m.p.h. (275 km/h), and at 3,280ft. (1,000 m) 177 m.p.h. (285 km/h). The climb to 16,400ft. (5,000 m) occupies 14 min. At a wing loading of 15.6 lb/sq. ft. (76 kg/m²) the landing speed is about 57 m.p.h. The weight empty is 3,200 lb. (1,450 kg), the weight loaded 4,850 lb. (2,200 kg), the span 43ft. 3in. (13.2 m), and the wing area 312 sq. ft. (29 m²).

What appears to be a "scaled-down" version of the Anbo IV, known as the Anbo VI, is used for military training. The Curtiss "Challenger" radial engine of 145 h.p. is used, and the top speed is 127 m.p.h.



BUSINESSLIKE: Showing the installation of the Bristol "Pegasus" engine in the Anbo IV and the wide undercarriage. (Flight Photo.)

CORRESPONDENCE

The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.

THE MONSTER MUST BE TAMED

[2957] Those who regret the "good old days," when things moved less consciously swiftly, are always amused by the remark of the Eastern potentate who, after being rushed across New York in a fast car and being told, proudly enough, that the driver had saved five minutes, gently asked what they proposed to do with these valuable five minutes.

In air line operation the question takes a slightly different form. Having saved a valuable hour or so, how are we to prevent it from being lost in terminal ground transport?

The overhead aerodrome in London may be, as your leader last week suggested, a "monster," but the thirty-five minutes taken by a good driver to reach any of London's airports appears to be slightly ridiculous when Le Bourget can be reached in less than two hours, and Cowes in less than an hour. As for purely inland services, the enthusiastic traveller finds that a normally fast air journey to Manchester saves precisely thirty-five minutes when the ground transport has been taken into account.

Something really must be done about it, and at present there appear to be three alternative methods.

The mountain might be brought to Mahomet; in other words, overhead aerodromes, on the rotating runway principle, might be constructed over business centres. A fantastic idea, perhaps, but even the Loch Ness monster may not prove to be so fabulous after all!

One really large and superbly equipped airport, outside fog and "bungaloid growth" zones, might be served by an extremely fast underground railway. A vision of the future, perhaps, but the Southern Railway runs really quite absurdly close to Croydon Airport.

Finally, there is the "feeder-line" autogiro using a moderate area of flat roof—perhaps a dream slightly less erotic for those who insist that trains (or aeroplanes) should disgorge their passengers in the heart of the country. This is, at least, a logical development. The high-speed transport machine will require more and not less highly organised ports, and these will tend to move farther away from business or living centres as civilisation becomes even more complex. The river landing is not an appealing project—a passenger might fall in.

London.

"SARTOR."

WOODEN SINGLE SPARS

[2958] I read with great interest your description of the Duncanson single spar wing, and would be very grateful if you would tell me whether this same system has ever been used for wings with the spar made of three ply. There seems to be a tendency to return to wooden construction for light aircraft, probably owing to the lesser cost of this form of construction, and if a spar could be constructed of ply wood which would show anything like the same weight reduction as it does with metal, designers ought to find it possible to give us a better performance, or a better load capacity.

I hope that you will be publishing an article giving the method of stressing this kind of wing, as it is certainly a subject upon which we should like fuller technical details after having our appetites whetted by this latest one written in a popular style.

Portsmouth.

J. F.

EXPENSE OF PRIVATE FLYING

[2959] For some years I have most gratefully availed myself of the excellent facilities provided by the A.A. for foreign touring. Now, owing to the amalgamation of the A.A. with the R.Ae.C., I find that I have to become the holder of an "Air Touring Card" at a charge of one guinea a year before I can renew my "Carnet de Passage en Douanes." Additionally, I am now forced to pay a deposit of £10 on the carnet itself, over and above the 25s. fee. I fail to see in what way the facilities as provided to holders of Air Touring Cards have improved upon the already perfect organisation of the A.A. for the benefit of its members.

One other drawback to the new scheme is the multiplication of documents to be carried on the aircraft. Already I have to remember to take with me my licence, passport, petrol carnet, carnet de passage, journey log, C. of A. and C. of R. This Air Touring Card is to my mind an unnecessary addition to this formidable array of papers.

Reading.

S. B. CLIFF.

ATTENDING TO THE "INNER MAN"

[2960] Our clients, the Directors of the Newton House Hotel, Londonderry, have seen us to-day in reference to the comment made in your paper to the effect that the hotel failed dismally to service the pilots' "inner men" with anything like the same efficiency as was displayed by the Yorkshire Air Services on the Newton House Hotel Aerodrome. We feel this statement needs explanation, and we shall be glad if you will publish the explanation, which is as follows:—

On the Saturday night, at 9 o'clock, a telephone message was received by the manager of the hotel to the effect that 20 pilots would be calling at the hotel on the following day, but whether they were calling for lunch or tea was not stated. The manager made enquiries from the Yorkshire Air Services, who operate the aerodrome, and they could tell him nothing definite. On the Sunday morning he telephoned Cramlington Aerodrome twice, but could get nothing definite from them as to when the pilots would arrive, so that until they did arrive he was not aware whether they would be there for lunch. They eventually arrived at 2.30; twenty-four of them.

The Newton House Hotel is in the country, and on that day had a very full luncheon to serve to many casual people who called. The consequence was these people had the lunch, and at 2.45 there was no lunch on, but bearing in mind that the time of the arrival of the pilots was not until 2.30, when service of soup, salmon, cold meats, sweets and cheese, was made at a charge of 2s. each, which does not surely bear the criticism which you place upon it as being a dismal failure. Incidentally, no complaint was made to the management at the time.

It seems to our clients if there was a "dismal failure" it was on the part of the Cramlington Aerodrome, who did not let our clients know of the time of arrival. Had the pilots arrived at 1 o'clock they would have eaten the luncheon served to the casual people and the casual people would have had the meal of the pilots.

Harrogate, August 17, 1934.

TITLEY AND PAVER-CROW,
Solicitors.

NEON LANDING AND OBSTRUCTION LIGHT

A NEW type of all-British Neon landing and obstruction light designed to replace the present type of paraffin flares which have been in use for many years has been produced by Bruplan, of 12, Percy Street, Tottenham Court Road, W.1. It is the work of Messrs. E. W. Bruton, F. Lantree and G. Payton, and is useful not only as a landing obstruction light, but when fitted to a suitable float and anchor may be used for marking out a "Seadrome." A "flasher" unit may be incorporated if desired. A large number of these units are in use for advertising purposes on cars, and are proving thoroughly reliable. The makers guarantee a life of 1,000 burning hours for the whole unit, and claim that it has been

tested on a continuous run of over 300 hours with great success.

The apparatus consists of a thick glass cylinder 15 in. high and 6 in. in diameter containing the Neon tubing, which can be of any of the usual Neon colours, i.e., red, green or blue. It is worked from a special patented "Portaneon" unit, with stepping transformer and battery mounted in the base.

The light is designed to be run off with a six volt dry cell or accumulator. With a standard six volt 3 amp. accumulator the unit will work for a period of ten hours at a consumption of just under 2 amps. It is claimed that there is absolutely no risk of fire, and that the unit does not produce radio interference. For landing on an aerodrome of average size, from

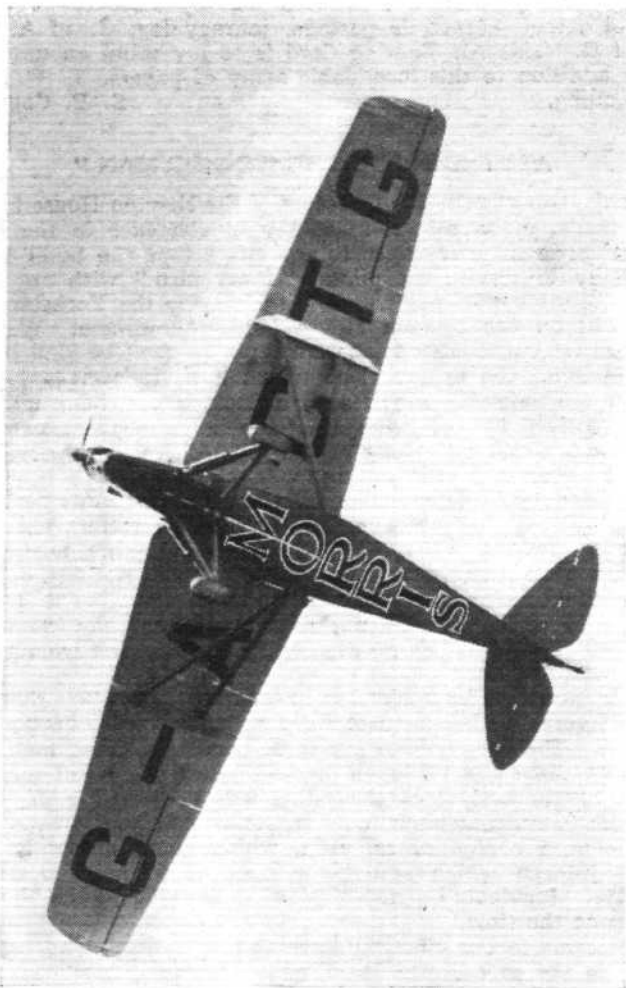
five to seven lights should prove sufficient. The complete apparatus weighs about 28 lb., and it is intended to market it at approximately £17 10s. without accumulator.

At a demonstration on Sunday night Capt. Baker flew away to the south of Heston and, on landing, reported that he was able to "pick up" the light at about the same time that the big "Airwork" sign on top of the hangar was sighted. So successful was the demonstration that six of the lights are to be made and will be tried out at Heston next Saturday.

The co-agents for the light are the International Aviation Agency, of 7, Princes Street, S.W.1, of which Sqd. Ldr. R. de H. Haig is the managing director, and Capt. Rex Stocken, of Dorland House, 18-20, Regent St., London, W.1.

MOTOR MANUFACTURERS USE THE AIR

At Heston Aerodrome recently Mr. H. Seaward, the new sales director of Morris Motors, Ltd., with his assistant, Mr. A. F. Organ, took delivery, from the Hon. Brian Lewis, of a "Leopard Moth" to be used by the company's sales staff.



TO ASSIST SALES: The "Leopard Moth" recently acquired by Morris Motors Ltd.

Morris Motors, it is understood, are the first motor manufacturers to have their own private aeroplane, and an aerodrome is to be built near the factory at Cowley.

COMPER AIRCRAFT REORGANISATION

The fate of the Comper Aircraft Company has now been settled. That reconstruction was in progress has been rumoured for some time, and now that everything is completed we are at liberty to publish the correct details. Started originally by Flt. Lt. N. Comper at Hooton Park, the company has made an enviable name for itself with fast small machines like the "Swift," which in the hands of sporting pilots has won so many records and races. The market for aeroplanes of this type is, however, limited, and it gradually became apparent that the finances of the company would not stand the heavy drain of carrying on with that particular policy. Reconstruction was therefore planned, and from now on the name of the company will be The Heston Aircraft Co.,

Ltd. Sir Norman J. Watson will continue to be chairman, and, following the resignation of the old board, a new board consisting of Sir Norman, Mr. B. R. S. Jones, and Mr. G. A. Lingham has been formed. The capital of the company has been increased, the old design department has been dissolved and a new one formed, and a new policy of construction will be entered into forthwith. "Swift" owners will, of course, be able to get service and spares from the new company.

AMERICAN ENGINES FOR ROUND EUROPE RACE

It is reported in the American technical Press that the six machines manufactured by the Panstwaine Zaklady Lotnicze (P.Z.L.), three by Sikoja Lotnicza Studentow Politechnike (R.W.D.), and three by the Bayerische Flugzeugwerke A.G. (B.F.W.), all of which are taking part in the 1934 International Touring Trophy Competition being held in Warsaw from August 28 to September 16, are fitted with Menasco B.6S engines.

THE DICKSON GLIDER

Prospective purchasers will be interested to know that the strength of this machine, as shown in our blue prints advertised in *Flight*, is in excess of that required by the British Gliding Association.

MODEL COMPETITION RESULT

In response to requests from several readers we give below the results of the Wakefield International Competition, which was held at Warwick on June 24 last:—

RESULT OF WAKEFIELD INTERNATIONAL COMPETITION.

Country.	Name.	DURATION OF FLIGHT.				Position.
		1st.	2nd.	3rd.	Average.	
BRITAIN	J. B. Allman ...	8.5	163.0	164.0	118.8	1
	W. Fillingham ...	68.0	71.5	71.0	70.2	2
	R. T. Howse ...	123.0	124.5	23.5	90.3	5
	T. H. Ives ...	90.2	66.5	8.0	54.9	7
	A. H. Liggitt ...	88.2	66.5	76.0	76.9	4
FRANCE	R. A. White ...	51.6	66.5	65.9	61.3	6
	Desnoes ...	7.0	6.0	—	4.3	13
	Genay ...	25.5	20.0	50.0	31.8	11
	Guillemand ...	—	Scratched	—	—	—
	L. M. Adams ...	34.5	6.5	32.0	24.3	12
U.S.A.	A. H. Du Flon ...	65.4	48.0	7.0	40.1	9
	W. E. Getsla ...	116.0	Gear Stripped	—	38.7	10
	A. Howell ...	46.5	60.0	54.0	53.5	8
	G. Light ...	—	Crashed	—	—	—
	F. Zaic ...	63.0	65.0	127.5	85.2	3

TURNER RINGS

REGARDING the article published in our issue for August 16 concerning Luke Turner rings for shock absorbers, etc., we wish to draw attention to the fact that the exclusive agents for all aircraft products of Luke Turner and Co., Ltd., are Burley, Ltd., of 192, Tottenham Court Road, London, W.1, and not Industrial Rubber Manufacturers, Ltd., as stated in the article in question.

NEW COMPANIES

AIRCRAFT FACILITIES LIMITED. Nominal capital £10,000 in £1 shares (2,500 ordinary and 7,500 6 per cent. cumulative redeemable preference). Objects: To adopt an agreement with Reginald W. West and to carry on the business of buyers, sellers, letters on hire and hire-purchase of or dealers in aircraft of all descriptions, motor cars, bicycles, etc. The first directors are: Air Commodore Bertie C. Hawley Drew, C.M.G., Brentwood, Harpenden, Herts; Clement A. Pike, A.F.R.Ae.S., 55, Sunningfields Road, Hendon N.W.4; Oswald M. Hill, B.Sc., M.C., 2, Shirehall Park, Hendon, N.W.4 (director: Marchant Hills & Co., Ltd.); Reginald W. West, F.C.A., The Coppice, Harpenden, Herts; Allen G. Williams, F.C.A., Medway, Essenden Road, South Croydon. Qualification: 50 shares. Remuneration: £50 each per annum. The registered office is at 4, Broad Street Place, E.C.2.

MARTIN BAKER AIRCRAFT COMPANY, LTD. (291,309). Private company. Capital, £10,500 in 6,500 ordinary 6,500 "A" deferred ordinary, and 6,500 "B" deferred ordinary shares, all of £1. Objects: To carry on the business of constructors, manufacturers and hirers of and dealers in and suppliers of designs and drawings of aeroplanes, aeroplane engines, airships and flying machines of all kinds, etc., and to adopt an agreement with James Martin. The subscribers (each with one share) are: Arthur J. Hull, 7, Glenwood Gardens, Ilford, E.4, solicitor's clerk; Arthur W. Pummell, 130, Woodville Road, Thornton Heath, certified accountant. The first directors are not named. Solicitors: Fladgate and Co., 18, Pall Mall, S.W.1. Registered office: Martin-Baker Aircraft Works, Higher Denham, Bucks.

AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motors. (The numbers in brackets are those under which the Specification will be printed and abridged, etc.)

APPLIED FOR IN 1934

Published August 23, 1934.

2659. M. BIRKIGT. Means for mounting guns on aircraft engines. (414,300.)